ORDER NO.DSD0503040C2

Service Manual

DVD Video Recorder

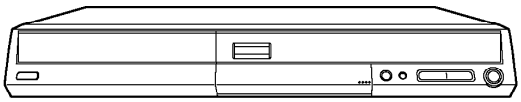
DMR-EH50EB / DMR-EH50EG / DMR-EH50EP / DMR-EH52EG

Vol.1

Colour

(K).....Black Type

(S).....Silver Type



Notes: This model's DVD Drive is VXY1872.

SPECIFICATIONS

ıtroduction

is service manual contains technical information which will allow service personnel's to understand
d service this model.
ease place orders using the parts list and not the drawing reference numbers.

he circuit is changed or modified, this information will be followed by supplement service manual to be filed
ginal service manual.

This service manual does not contain the following information, because of the impossibility of sevicing at component level.

Schematic Diagram, Block Diagram and P.C.B. layout of Digital P.C.B.
Parts List for individual parts of Digital P.C.B.
Exploded View and Parts List for individual parts of RAM drive.

The following category are recycle module part. Please send them to Central Repair Center.

Digital P.C.B. (EH50EB: RFKBEH50EB, EH50EG/EH52EG: VEP79106B, EH50EP: RFKBEH50EP)
RAM drive (VXY1872)

ecifications

wer supply	AC220-240 V, 50 Hz
wer consumption	31 W
cording system	DVD video recording format (DVD-RAM), DVD video format (DVD-R), DVD video format (DVD-RW)
tical pick-up	System with 1 lens, 2 integration units (662 nm wavelength for DVDs, 795 nm wavelength for CDs)
cordable discs	DVD-RAM • Ver.2.0 Ver.2.1/3x-SPEED DVD-RAM Revision 1.0 • Ver.2.2/5X-SPEED DVD-RAM Revision 2.0
	DVD-R • for General Ver.2.0 • for General Ver.2.0/4X-SPEED DVD-R Revision 1.0 • for General Ver.2.x/8X-SPEED DVD-R Revision 3.0
	DVD-RW • Ver.1.1 • Ver.1.1/2x-SPEED DVD-RW Revision 1.0 • Ver.1.2/4X-SPEED DVD-RW Revision. 2.0
	+R • Ver.1.0,Ver.1.1,Ver.1.2
ernal HDD pacity	80GB
uick Start for cording uick Start: ON)	1 Sec. Quick Start for Recording on DVD-RAM* *From the power off state, for recording on DVD-RAM starts about 1 second after first pressing the power botton and then sequentially pressing the REC button (Quick Start Mode).
cording time pprox.)	Max. 8 hours (using 4.7 GB disc) XP: 60 minutes SP: 120 minutes LP: 240 minutes EP: 360 minutes or 480 minutes Max.142 hours with HDD (EP 8H mode)
gion number	Region No.2
scs played	DVD-RAM DVD-R DVD-RW +R +RW DVD-Video,DVD-Audio,Video CD,CD-Audio (CD-DA) CD-R/RW (MP3,CD-DA,Video CD, JPEG formatted discs)
mpression ethod	MP3 Format : ISO9660 level1 or 2(except for extended formats), Joliet Compatible compression rate : 32kbps ~ 320kbps Compatible sampling rate : 16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz This unit is not compatible with ID3 tags.
	CD (JPEG) Format : ISO9660 level1 or 2(except for extended formats), Joliet Compatible pixels : between 34×34 and 6144×4096 pixels Sub sampling 4:2:2 or 4:2:0 This unit is not compatible with MOTION JPEG.
	MP3, CD (JPEG) Common Items Maximum number of folders : 99 (one disc) Maximum number of files : 999 (one disc) This unit is compatible with multi-session. This unit is not compatible with packet writing.
deo system	
' system	PAL: 625 lines, 50 fields SECAM: 625 lines, 50 fields (EG/EP input only) NTSC: 525 lines, 60 fields
cording system	MPEG2 (Hybrid VBR)
	Video In: (PAL/NTSC) AV1/AV2(21pin x 2), AV3/AV4(pin jack x 2)

Antenna reception system	EH50EG/EH52EG	
	CCIR (PAL-BGH) (SECAM-BG)	VHF: CH E2 - CH E12, CH A - CH H2 (For Italy UHF: CH 21 - CH 69 CATV: CH S01 - CH S05(S1-S CH S1 - CH S20(M1-U CH S21 - CH S41
	France (SECAM-L,L')	VHF: CH 2 - CH 10 UHF: CH 21 - CH 69 CATV: CH B - CH Q (100.5-299.5MHz), CH S21 - CH S41 (299.5-467.25MHz)
	EH50EB	
	PAL-I	VHF: CH 4 - CH 13, CH A - CH J(For ES10E UHF: CH 21 - CH 68
	EH50EP	
	OIRT (PAL-DK) (SECAM-DKK1)	VHF: CH R1 - CH R12 UHF: CH 21 - CH 69 CATV: CH 44MHz - 470MHz
	CCIR (PAL-BGH) (SECAM-BG)	VHF: CH E2 - CH E12 UHF: CH E21 - CH E69 CATV: CH S01 - S05, M1 - M1 U1 - U10, S21 - S41
	South Africa(PAL-I)	VHF: CH 4 - CH 13 UHF: CH 21 - CH 68
RF Converter Output	EH50EB	UHF: CH 21 - CH 68, 71±3dBuV;75Ω
	EH50EG/EP, EH52EG	Not provided
SD card slot		
Still Picture (JPEG,TIFF)	SD memory card slot: 1pc	
Compatible Media	SD memory card/Multi Media Card *Includes miniSD cards. (A miniSD card adapter needs to be inserted.)	
Format	FAT12, FAT16	
Image file format	• JPEG conforming to DCF (Design rule for Camera File system) (sub sampling; 4:2:2 or 4:2:0) • TIFF (Uncompressed RGB chunky) • DPOF Compatible	
Number of pixels	34×34 to 6144×4096	
Thawing time	Approx. 7sec (2M pixels)	
Audio system		
Recording system	Dolby Digital 2ch	
Analog Input	AV1/AV2(21pin x 2), AV3/AV4(pin jack x 2) Standard input: 0.5 Vrms Full scale: 2.0 Vrms at 1KHz Input impedance: More than 10KΩ	
Analog Output	AV1/AV2(21pin x 2), LINE(pin jack x 1) Standard output: 0.5 Vrms Full scale: 2.0 Vrms at 1KHz Output impedance: Less than 1.0KΩ	
Number of channels	Recording: 2 channels Playback: 2 channels	
Digital Output	Digital Audio Optical Output Connector (PCM,Dolby Digital,DTS,MPEG)	
Dimensions	Approx. 430 (W) x 63 (H) x 350.5 (D) mm [Approx. 16 15/16" (W) x 2 1/2" (H) x 13 13/16" (D)] (excluding protrusions)	
Mass	Approx. 4.4kg (9.92 lbs)	
Operating temperature	5°C - 40°C (41 F - 104 F)	
Operating humidity range	10 %-80 % RH (no condensation)	
Clock unit	Quartz-controlled 12-hour digital display	

deo Input	(PAL/NTSC)	AV3/AV4(pin jack x 2) 1.0Vp-p ; 75Ω	Clock unit	Quartz-controlled 12-hour digital display
	S-Video In: (PAL/NTSC)	AV2(21pin), AV3/AV4(S connector x 2) Y:1.0Vp-p ; 75Ω, C:0.3Vp-p ; 75Ω	LASER Specification (Class I LASER Product)	
	RGB In(PAL):	AV2(21pin) 0.7Vp-p ; 75Ω	Wave length	795 nm(CDs), 662 nm(DVDs)
			Laser power	No hazardous radiation is emitted with the safety protection.
	Video Out: (PAL/NTSC)	AV1/AV2(21pin x 2), LINE(pin jack x 1) 1.0Vp-p ; 75Ω	Power consumption in standby mode	approx. 3.0 W
	S-Video Out: (PAL/NTSC)	AV1(21pin), S connector x 1 Y:1.0Vp-p ; 75Ω, C:0.3Vp-p ; 75Ω	Solder	This model use lead free solder (PbF).
eo Output	RGB Out: (PAL/NTSC)	AV1(21pin), 0.7Vp-p ; 75Ω		
	Component video out: (NTSC 480P/480I) (PAL 576P/576I)	Y: 1.0Vp-p ; 75Ω(pin jack) PB: 0.7Vp-p ; 75Ω(pin jack) PR: 0.7Vp-p ; 75Ω(pin jack)		

Notes : Mass and dimensions are approximate.
Specifications are subject to change without notice.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. Safety precautions

1.1. General guidelines

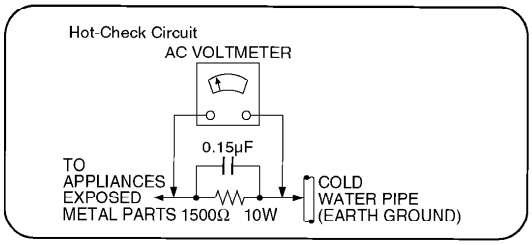
1. **When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
2. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
3. **After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

1.1.1. Leakage current cold check

1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc.**

When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω . / When the exposed metal does not have a return path to the chassis, the reading must be ∞.

Figure 1



1.1.2. Leakage current hot check / (See Figure 1 .)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**
2. **Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 µ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.**
3. **Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.**

2. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-sand semiconductor "chip"

components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage**

an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

3. Precaution of Laser Diode

CAUTION:

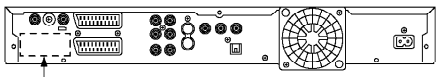
This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length: 662 nm (DVDs) /795 nm (CDs)
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is safety level,but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Leserstrahlung von der Laserinheit adgestrahit.
Wellenlänge: 662 nm (DVDs) /795 nm (CDs)
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlungan der Lasereinheit ungefährlich, wenn folgende Punkte beachtet werden:

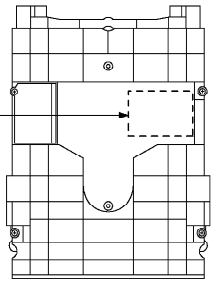
1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinhit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

CLASS 1
LASER PRODUCT

DANGER – VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION – VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION – RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL – SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! – AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING – SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL – SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT – SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET, NICHT DEM STRAHL AUSSETZEN.
注意 – 打开时有可见及不可见激光辐射，避免激光束照射。
注意 – ここを開くと可視及び不可視のレーザー放射が出ます。ビームを直接見ろう、触れたりしないでください。
R.QLS0233



CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

4. Handling the Lead-free Solder

4.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:
P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).

- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).

- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

5. Each Button

6. New Feature

6.1. Quick start function(REC)

1. General

A few seconds after tuning on the unit,you can start recording to DVD-RAM,HDD.

You can switch the operation of this function (ON/OFF) on the menu screen. .

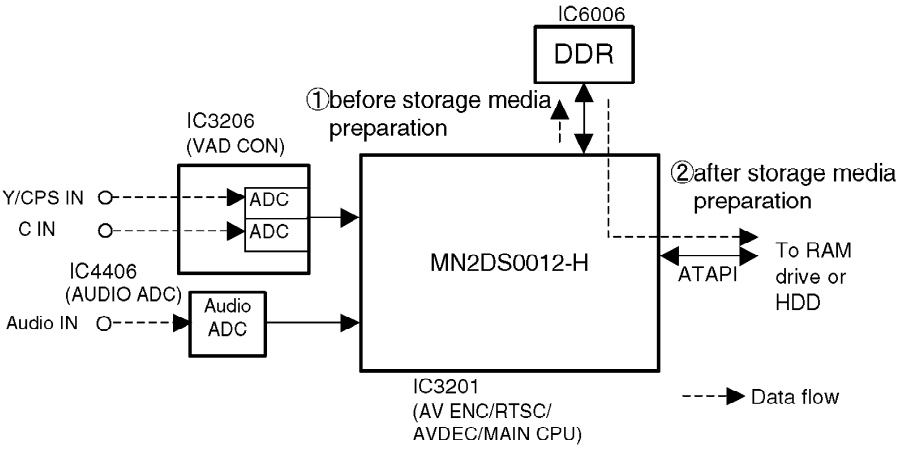
2. Quick start(REC) principle

In the power-off at Quick start, only power supplies for video IC,tuner and storage media are cut off.

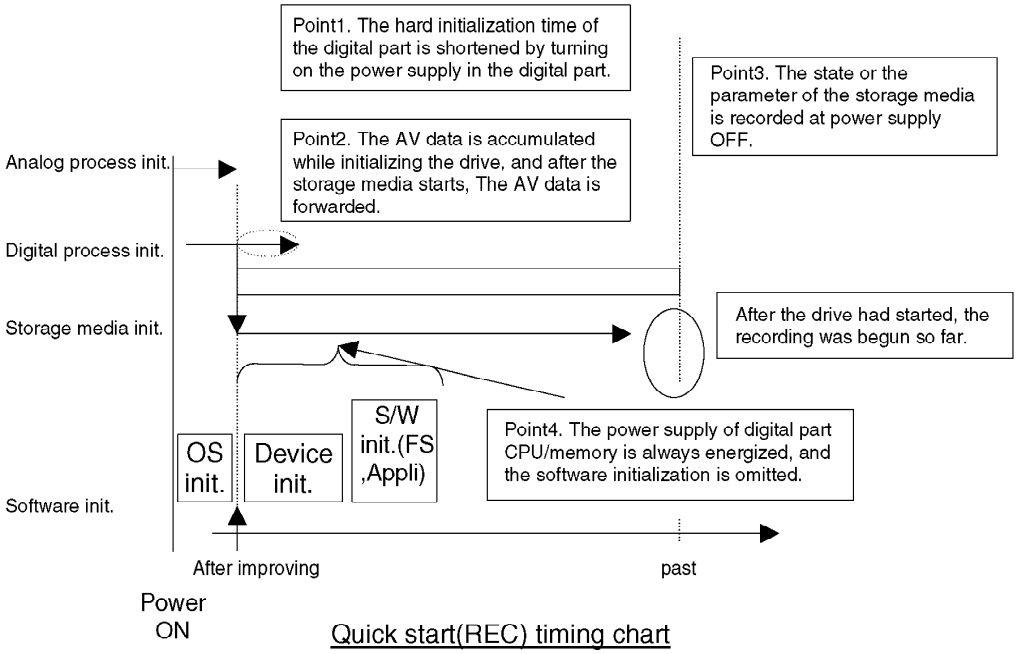
①When the REC button is pushed a few second after the power button is pushed, Audio and Video data are stored in DDR SDRAM before a storage media(DVD-RAM or HDD) preparation.

***Preparation time → DVD-RAM: Fabout 8seconds**
HDD: about 18seconds

②After a storage media(DVD-RAM or HDD) preparation,Audio and Video data are transfer from DDR SDRAM to the storage media.



Quick start(REC) explanation chart


Point1. The hard initialization time of the digital part is shortened by turning on the power supply in the digital part.
Point3. The state or the parameter of the storage media is recorded at power supply OFF.
Point2. The AV data is accumulated while initializing the drive, and after the storage media starts, The AV data is forwarded.
Analog process init.
Digital process init.
Storage media init.
After the drive had started, the recording was begun so far.
S/W init.(FS ,Appli)
Point4. The power supply of digital part CPU/memory is always energized, and the software initialization is omitted.
OS init.
Device init.
Software init.
After improving
past
Power ON

Quick start(REC) timing chart

7. Taking out the Disc from RAM-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

7.1. Forcible Disc Eject

7.1.1. When the power can be turned off.

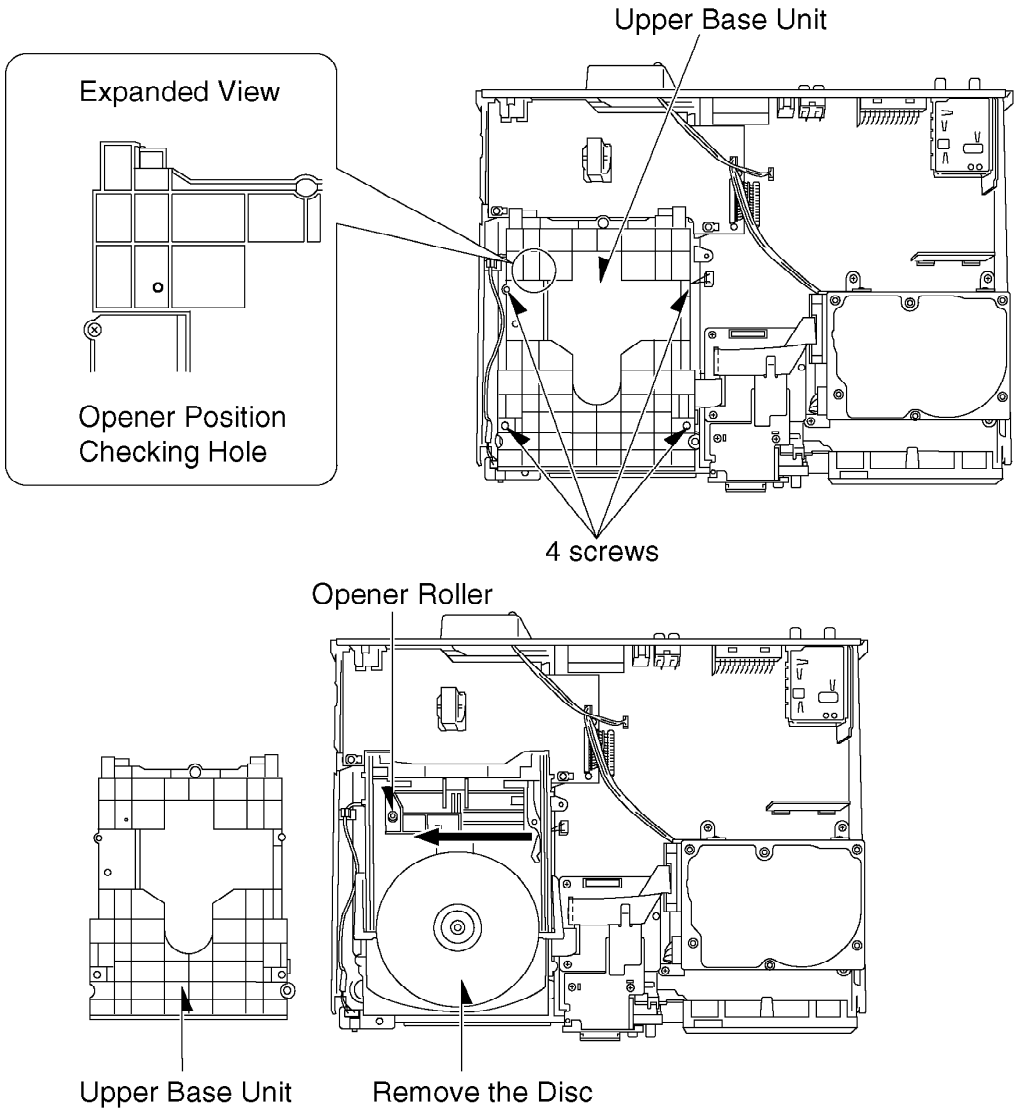
1. Turn off the power and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

7.1.2. When the power can not be turned off.

1. Press [POWER] key on the front panel for over 10 seconds to turn off the power forcibly, and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

7.2. When the Forcible Disc Eject can not be done.

1. **Turn off the power and pull out AC cord.**
2. **Remove the Top Case.**
3. **Remove the Front Panel.**
4. **Remove 4 screws and Upper Base Unit from DVD-RAM Drive.**
5. **Take out the disc and put the Opener Roller on fully position for direction of Arrow.**
6. **Put the Upper Base Unit so that the Opener Roller is inserted into the groove.**
7. **Check Opener Roller is seen through the Opener position Checking Hole, and tighten 4 screws.**



8. Service Explorer

Confirm “RAM-Drive Last Error” in Service Mode

Execute Service Mode

1. Press [REC], [CH UP] and [OPEN/CLOSE] simultaneously for 5 seconds when P-off.
FL Display:

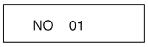
SERVICE MODE

***After finishing display “(7). Factor of Drive Error occurring”, press [0] [2] ~[1] [9] keys of the Remote Controller so that 19 memories can be displayed as maximum.**

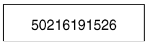
2. Press [4] [2] keys of remote controller.

Example of FL Display:

(1) Error Number is displayed for 5 seconds.

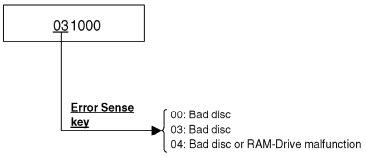


(2) Time when the error has occurred is displayed for 5 seconds.



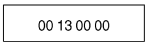
The error has occurred at 2005(year)/Feb.(month)/16(day)/19(hour):15(minute):26(second)

(3) Last Drive Error (1/2) is displayed for 5 seconds.



When above error codes are displayed, confirm operation with Panasonic RAM disc or Panasonic DVD-R disc.
***If the operation is OK, judge the error is due to media.**
***If the operation is NG and symptom as BLOCK NOISES and so on that are particular symptom of Digital appears, judge the error is due to RAM-Drive or Digital PCB.**

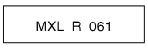
(4) Last Drive Error (2/2) is displayed for 5 seconds.



*This error code is unnecessary for service.

(5) Error occurring Disc type is displayed for 5 seconds.

(6) Disc Maker's ID is displayed for 5 seconds.



Example of Disc Maker's ID:
DVD-R Disc

No.	FL Display (Disc Maker's ID)	Disc Maker	Country
1	MEI	Panasonic	Japan
2	PVC	Pioneer	Japan
3	MCC	Mitsubishi Chemical Corporation	Japan
4	TDK	TDK	Japan
5	MXL	Maxell	Japan
6	MCI	MITUI CHEMICALS	Japan
7	JVC	Victor JVC	Japan
8	TAIYOYUDEN	Taiyo yuden	Japan
	TYG		
9	GSC	Giga Storage	Taiwan
10	PRODISC	Prodisc	Taiwan
11	PRINCO	PRINCO	Taiwan
12	RITEK	RITEK	Taiwan
13	OPTDISC	OPTDISC	Taiwan
14	LEAD DATA	LEAD DATA	Taiwan

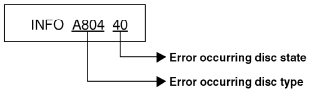
No.	FL Display (Disc Maker's ID)	Disc Maker	Country
15	CMC	CMC	Taiwan
16	AUVISTAR	AUVISTAR	Taiwan
17	ACER	Acer	Taiwan
18	VIVASTAR	VIVASTAR	Switzerland
19	LGE	LG Electronics	Korea

DVD-RAM Disc

No.	FL Display (Disc Maker's ID)	Disc Maker	Country
1	MEI	Panasonic	
2	MATSUSHITA	Panasonic	Japan
3	MXL	Maxell	Japan
4	PRODISC	Prodisc	Taiwan
5	OPTDISC	OPTDISC	Taiwan
6	CMC	CMC	Taiwan

***Since an display is arbitrarily set up by the disk producer side, the above-mentioned display may be changed.**
Please make it reference as an example of a display.

(7) Factor of Drive Error occurring is left displayed



Error Occurring Disc Type

FL Display	Disc Type
00	DVD-ROM/Video
01	Audio-CD
02	2.6GB DVD-RAM
03	4.7GB DVD-RAM
04	DVD-R

Error Occurring Disc State

FL Displays (Hexadecimal)	Description			
	Disc distinction state	Cartridge disc state	Cartridge disc state	Disc size
00	OK	With cartridge	Has not been opened yet.	12 cm
10	OK	With cartridge	Has not been opened yet.	8 cm
20	OK	With cartridge	Has been opened.	12 cm
30	OK	With cartridge	Has been opened.	8 cm
40	OK	Bare	Has not been opened yet.	12 cm
50	OK	Bare	Has not been opened yet.	8 cm
60	OK	Bare	Has been opened.	12 cm
70	OK	Bare	Has been opened.	8 cm
80	NG	With cartridge	Has not been opened yet.	12 cm
90	NG	With cartridge	Has not been opened yet.	8 cm
A0	NG	With cartridge	Has been opened.	12 cm
B0	NG	With cartridge	Has been opened.	8 cm
C0	NG	Bare	Has not been opened yet.	12 cm
D0	NG	Bare	Has not been opened yet.	8 cm
E0	NG	Bare	Has been opened.	12 cm
F0	NG	Bare	Has been opened.	8 cm

9. Self-Diagnosis and Special Mode Setting

9.1. Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by "Self-Diagnosis Display" when any error has occurred.
U, H** and F** are stored in memory and held.**
You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.
Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic Fl
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	REMOTE "*" is remote c code of the ma Display for 5 s
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.	No display	U59 "U59 is displa minutes.
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	U99 Displayed is le [POWER] key i
H19	Inoperative fan motor	When inoperative fan motor is detected after powered on, the power is turned off automatically. The event is saved in memory.	No display	No display

Error Code	Diagnosis contents	Description	Monitor Display	Automatic Fl
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
F34	Initialization error when main microprocessor is started up for program recording	When initialization error is detected after starting up main microprocessor for program recording, the power is turned off automatically. The event is saved in memory.	No display	No display
UNSUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	“This disc is incompatible.”	UNSUPPO Display for 5 s
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	“Cannot read. Please check the disc.”	NOREAD Display for 5 s
HARD ERR	Drive error	The drive detected a hard error.	“DVD drive error.”	HARD ERF Display for 5 s
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / RAM drive.	No display	SELF CHE
Full Program	32 programs are already set.	32 programs are already set.	No display	PROG FULL

Error Code	Diagnosis contents	Description	Monitor Display	Automatic Fl
UNFORMAT	Unformatted disc error	You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment. If you will use this disc, format is necessary. But, all program recorded on this disc will be deleted.	Format This disc is not formatted properly. Format the disc in DISK MANAGEMENT?	UNFORMAT
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. "BYE" is displayed and power will be turned off. In case "Quick Start" of setup menu is ON, it is displayed in restoration operation for AC off.	No display	PLEASE WA

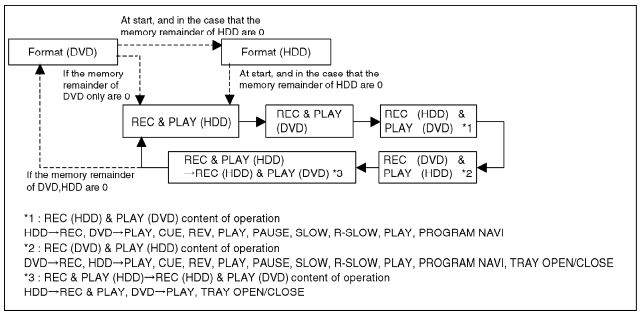
9.2. Special Modes Setting

Item		FL display	Key opera
Mode name	Description		Front K
TEST Mode	*All the main unit's parameters (include tuner) are initialized.	TEST AV1	Press [STOP], [(and [OPEN/CLO simultaneously seconds when p off.
Rating password	The audiovisual level setting password is initialized to "Level 8".	INIT	Open the tray, a [REC] and [PLA simultaneously seconds. NOTE: Drive should be to DVD.
Service Mode	Setting every kind of modes for servicing. *Details are described in "9.3. Service Mode".	SERVICE MODE	When the powe press [CH UP], [CLOSE] and [RE simultaneously seconds.

Item		FL display	Key opera
Mode name	Description		Front K
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. *When Timer REC is ON or EXT-LINK is ON, execute " Forced disc eject " after releasing Timer REC or EXT-LINK. *This command is not effective during "Child lock" is ON. While Demonstration Lock is being set, this Forced disc eject function is not accepted. If this command was executed while TIMER REC is being set, TIMER REC setting will be kept.	The display before execution leaves. **********	When the power press [STOP] ar keys simultaneo seconds.
Child lock/unlock	Set or release “Child Lock”.	X HOLD	Press [ENTER] a [RETURN] by re controller simul until [X-HOLD] i displayed.
NTSC/PAL system select	To switch PAL/NTSC alternately.	The display before execution leaves. **********	While the power E mode), press and [OPEN/CLO simultaneously seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly. *When Timer REC is ON or EXT-LINK is ON, execute “Forced Power-off” after releasing Timer REC or EXT-LINK.	Display in P-off mode.	Press [Power] k than 10 seconds

Item		FL display	Key opera
Mode name	Description		Front K
Aging	Perform sequence of modes as * Aging Description shown below continually. **Caution:** **All programs in HDD and DVD-RAM disc will be deleted because Formatting is done once in Aging process.**	Display following the then mode.	When the powe press [STOP], [F and [OPEN/CLO simultaneously seconds and les seconds. NOTE1: If Unit has not tu Aging mode by operations shov execute TEST M and re-execute shown above. (*All the main u parameters incl are initialized by mode.) NOTE2: If the unit has h because of pres for over 10 secc turn off the pow execute this cor *When releasing mode, press [PC key.

Aging Contents (Example):


At start, and in the case that the memory remainder of HDD are 0
Format (DVD)
Format (HDD)
If the memory remainder of DVD only are 0
At start, and in the case that the memory remainder of HDD are 0
REC & PLAY (HDD)
REC & PLAY (DVD)
REC (HDD) & PLAY (DVD) *1
REC & PLAY (HDD) →REC (HDD) & PLAY (DVD) *3
REC (DVD) & PLAY (HDD) *2
If the memory remainder of DVD,HDD are 0

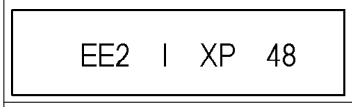
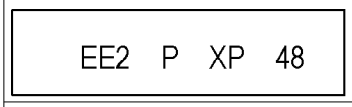
*1 : REC (HDD) & PLAY (DVD) content of operation
HDD→REC, DVD→PLAY, CUE, REV, PLAY, PAUSE, SLOW, R-SLOW, PLAY, PROGRAM NAVI
*2 : REC (DVD) & PLAY (HDD) content of operation
DVD→REC, HDD→PLAY, CUE, REV, PLAY, PAUSE, SLOW, R-SLOW, PLAY, PROGRAM NAVI, TRAY OPEN/CLOSE
*3 : REC & PLAY (HDD)→REC (HDD) & PLAY (DVD) content of operation
HDD→REC & PLAY, DVD→PLAY, TRAY OPEN/CLOSE

Item		FL display	Key opera
Mode name	Description		Front K
Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by “Main unit initialization” of service mode.	*When lock the tray. LOCK “LOCK” is displayed for 3 seconds.	When the powe press [STOP] ar [POWER] keys simultaneously seconds.
		*When unlock the tray. UNLOCK “UNLOCK” is displayed for 3 seconds.	When the powe press [STOP] ar [POWER] keys simultaneously seconds.
		*When press OPEN/ CLOSE key while the tray being locked. LOCK Display “LOCK” for 3 seconds.	Press [OPEN/CL while the tray b locked.
ATP re-execution	Re-execute ATP.	Display at ATP executing. **********	When the powe E mode), press and [CH DOWN] simultaneously seconds.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. **********	When the powe E mode), press and [PLAY] simultaneously seconds.

9.3. Service Modes

Service mode setting: While the power is off, press REC, CH UP and OPEN / CLOSE simultaneously for five seconds.

Item		FL display	Key opera
Mode name	Description		(Remote contr
Release Items	Item of Service Mode executing is cancelled.	SERVICE MODE	Press [0] [0] or [service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in "9.1. Self -Diagnosis Functions".	♣□□ *♣ shows U/H/F. □□ shows number.	Press [0] [1] in s mode
ROM Version Display	Region code, MAIN firm version, TIMER firm version and DRIVE firmware versions are displayed on FL for five seconds per each version in order, but ROM version will be left displayed.	REGION* MAIN ****** TIMER****** DRIVE **** ROM * *** "*" are version displays.	Press [0] [2] in s mode
White Picture Output	White picture is output as component Output from AV Decoder. *White picture (Saturation rate : 100%) *It is enable to switch Interlace/ Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". WHIT I Switch Interlace/ Progressive WHIT P	Press [1] [1] in s mode. Press [1] [4] in V Picture Output r *I/P are switche alternately.
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/ Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". MAGE I Switch Interlace/ Progressive MAGE P	Press [1] [2] in s mode. Press [1] [4] in M Picture Output r *I/P are switche alternately.

Item		FL display	Key opera
Mode name	Description		(Remote contr
RTSC Return in XP (A & V)	AV1 input signal is encoded (XP), decoded (XP) and output decoded signal to external without DISC recording and DISC playback.	Initial mode: EE2/ Interlace / XP/ Audio 48kHz 	Press [1] [3] in s mode.
		Switch Interlace/ Progressive 	Press [1] [4] in F Return XP mode *I/P are switche alternately.
		Audio 44.1 kHz/ 48 kHz Switch 	Press [2] [4] in F Return XP mode *48 kHz / 44.1 kH switched alterna
I/P Switch	Switch Interlace and Progressive in EE mode. *Initial setting is “Interlace”. *This command is effective during executing “White Picture Output”, “Magenta Picture Output” and “RTSC Return in XP (A & V)” modes.	Initial mode is Interlace Switch Interlace/ Progressive 	Press [1] [4] in I mode. *I/P are switche alternately.
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.		Press [2] [1] in s mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B..		Press [2] [2] in s mode.
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) 	Press [2] [3] in s mode.
		Audio 44.1kHz/48kHz switching 	Press [2] [4] in A Pattern Output m *48 kHz / 44.1 kH switched alterna

Item		FL display	Key opera
Mode name	Description		(Remote contr
HDD READ inspection	Perform a complete read inspection of the HDD.	When the HDD is OK HDD RDOK If the HDD is defective HDD RDNG□○○ □ :Judge of Forward rate. *When normal (Forward rate is 35Mbps or more, and there is no HDD error):□is Space. *When Abnormal (Forward rate is less than 35Mbps or HDD error existing):□is X. ○○ :Number of what have spent time for seeking is over 100ms. *When normal:○○ are spaces. *When Abnormal: Display Number of what have spent time for seeking over 100ms. However, if the number is more than 100, display [XX]. We judge it is normal that the number is less than 4.	Press [3] [1] in t mode. *When cancelin checking mode executing, do "f power-off". Method: Press the "POW button more tha seconds.
Laser Used Time Indiction	Check laser used time (hours) of drive.	LASER***** ● (*****) is the used time display in hour. ● Laser used time of DVD / CD in Playback/ Recording mode is counted.	Press [4] [1] in s mode.
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	CLR LASER	Press [9] [5] in s mode.

Item		FL display	Key opera
Mode name	Description		(Remote contr
RAM Drive Last Error	RAM Drive error code display. *For details about the drive error code, refer to the Service Manual for the specific RAM Drive. *Details are described in “8. Service Explorer”.	1. Error Number is displayed for 5 seconds. NO ** 2. Time when the error has occurred is displayed for 5 seconds. YMMDDhhmmss Y: Year MM: Month DD: Day hh: Hour mm: Minute ss: Second 3. Last Drive Error (1/2) is displayed for 5 seconds. ****** 4. Last Drive Error (2/2) is displayed for 5 seconds. ******** 5. Error occurring Disc type is displayed for 5 seconds. MEDIA****** 6. Disc Maker ID is displayed for 5 seconds. ********** 7. Factor of Drive Error occurring is left displayed	Press [4] [2] in s mode. When “INFO**** being displayed error histories c displayed by pr [1] - [1] [9] In case that the cannot be identi display is black

		INFO*******	

Item		FL display	Key opera
Mode name	Description		(Remote contr
Delete the Last Drive Error	Delete the Last Drive Error information stored on the DVD RAM-Drive.	CLR DRIVE	Press [9] [6] in s mode.
Turn on all FL/ LEDs	All segments of FL and all LEDs are turned on.	All segments are turned on.	Press [5] [1] in s mode.
PB HIGH Signal Output	8 pin of AV 1 Jack (PB HIGH terminal) is High (approx. 11V DC).	PB8 HIGH	Press [5] [2] in s mode.
PB MIDDLE Signal Output	8 pin of AV 1 Jack (PB HIGH terminal) is Middle (approx. 5.5V DC).	PB8 MIDDLE	Press [5] [3] in s mode.
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front key Switches.	000Γ (1) ** (2) (1) Each time a key is pressed, segment turned on increases one by one. (2) Total umber of keys that have been pressed.	Press [5] [4] in s mode.
Production Date Display	Display the date when the unit was produced.	PD YYYYMMDD YYYY: Year MM: Month DD: Day	Press [6] [1] in s mode.
Display the accumlated working time	Display the accumulated unit's working time.	********** S (Indicating unit: Second)	Press [6] [4] in s mode.

Item		FL display	Key opera
Mode name	Description		(Remote contr
Display the Error History	Display the Error History stored on the unit.	Display reason of error for 5 seconds. FTREC*** Display the time when the error has occurred for 5 seconds.. YYMMDDHHMM YY: Year MM: Month DD: Day HH: Hour MM: Minute Accumulated working time till occuring of the error is left displayed. ********** S (Indicating unit: Second)	Press [6] [5] in s mode. Then press [0] [the past 19 erro are displayed.
Delete the Error History	Delete Error History information stored on the unit.	CLR FTREC	Press [9] [7] in s mode.
SD card WRITE check	Check SD card WRITE function with SD card slot.	When the WRITE check is OK. SDCD OK When the WRITE check is NG. SDCD NG *Note: The image stored in the SD card will be erased.	Insert a SD card card slot, and p in service mode *Insert SD card power is off. *Check for [CAF display on the F and go on the p

Item		FL display	Key opera
Mode name	Description		(Remote contr
AV4(V) / AV1(RGB) I/O Setting	Set input to AV4 (V) and set output to AV1 (RGB) for I/O checking	AV4V-AV1RGB	Press [8] [0] in s mode.
AV2(Y/C) / AV1(V) I /O Setting	Set input to AV2 (Y/C) and set output to AV1 (V) for I/O checking	AV2YC-AV1V	Press [8] [1] in s mode.
AV2(V) / AV1(Y/C) I /O Setting	Set input to AV2 (V) and set output to AV1 (Y/C) for I/O checking	AV2V-AV1 YC	Press [8] [2] in s mode.
AV2(RGB) / AV1(V) I/O Setting	Set input to AV2(RGB) and set output to AV1(V) for I/O checking	AV2RGB-AV1V	Press [8] [3] in s mode.
P50(H) Output	Timer Microprocessor IC7501-83 output High signal for AV1-pin 10 passing through inverter (approx. 0V DC at AV1-pin 10).	P50 HIGHOUT When OK. P50 HIGH OK When NG. P50 HIGH NG	Press [8] [4] in s mode.
P50(L) Output	Timer Microprocessor IC7501-83 output Low signal for AV1-pin 10 passing through inverter (approx. 4.4V DC at AV1-pin 10).	P50 LOW OUT When OK. P50 LOW OK When NG. P50 LOW NG	Press [8] [5] in s mode.
Tray OPEN/ CLOSE Test	The RAM drive tray is opened and closed repeatedly.	NO********* "*" is number of open/ close cycle times.	Press [9] [1] in s mode *When releasing mode, press the button of Remot Controller more seconds.
Error code initialization	Initialization of the last error code held by timer (Write in F00)	CLR E-CODE	Press [9] [8] in s mode.

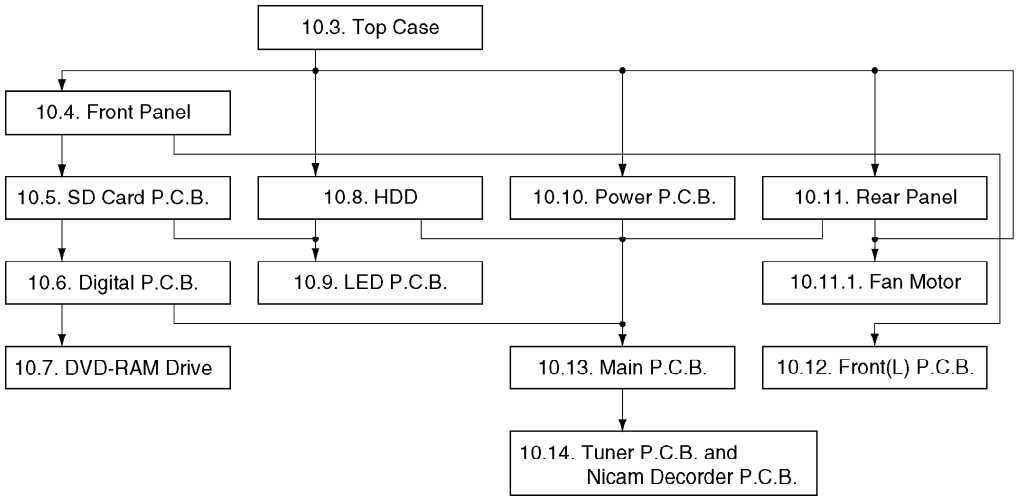
Item		FL display	Key opera
Mode name	Description		(Remote contr
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	CLR SERV	Press [9] [9] in s mode.
Finishing service mode	Release Service Mode.	Display in STOP (E-E) mode. **********	Press power bu the front panel c controller in ser

10. Assembling and Disassembling

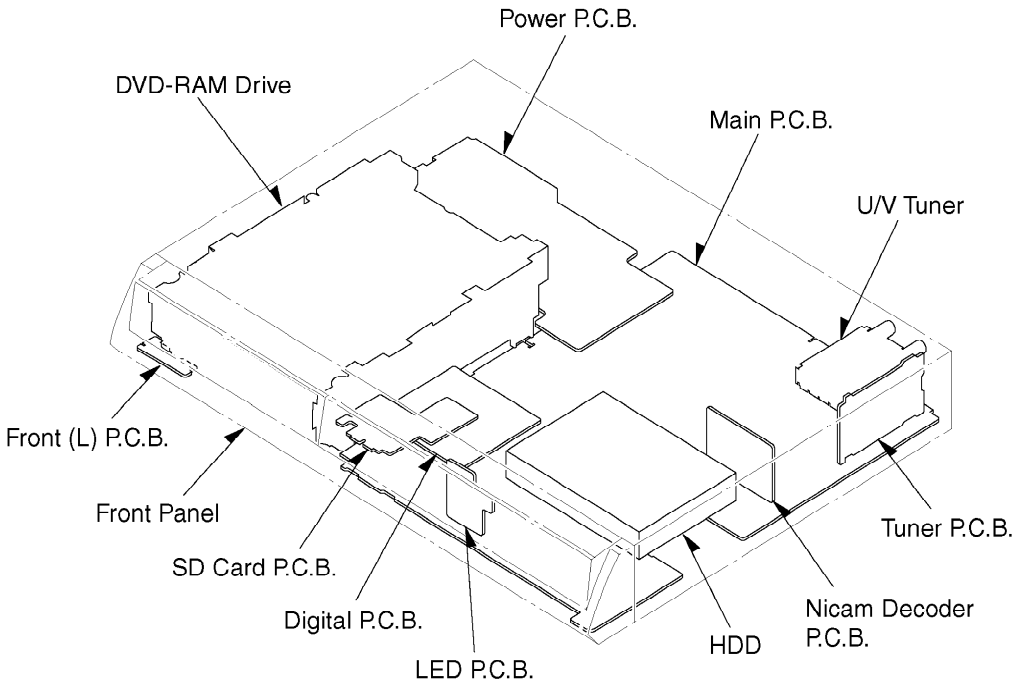
Caution:
Original screws should be used.

10.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.
To assemble the unit, reverse the steps shown in the chart below.

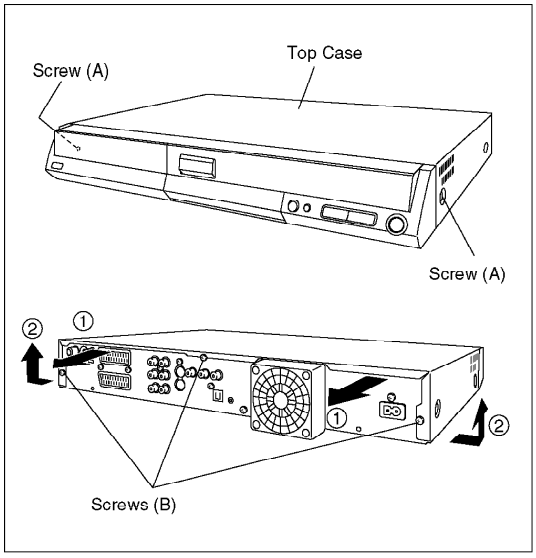


10.2. P.C.B. Positions



10.3. Top Case

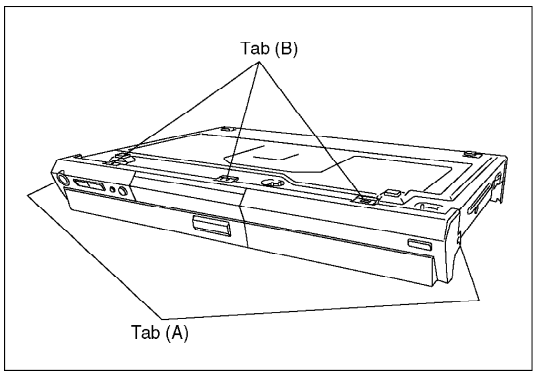
1. **Remove the 2 screws (A) and 3 screws (B).**
2. **Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.**



10.4. Front Panel

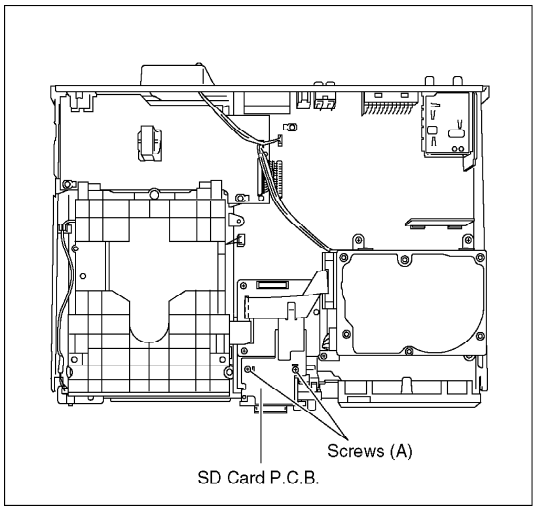
1. **Unlock 2 tabs (A) and 3 tabs (B) in this order to remove Front Panel.**
   (The tab (A) and (B) should be unlocked at the same time,

respectively.)



10.5. SD Card P.C.B.

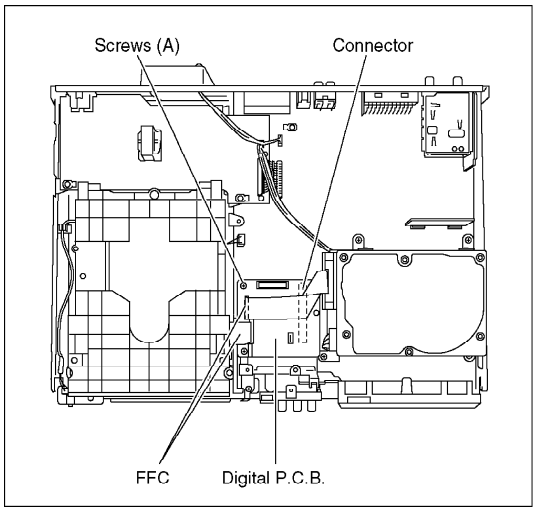
1. Remove 2 Screws (A) to remove SD Card P.C.B.



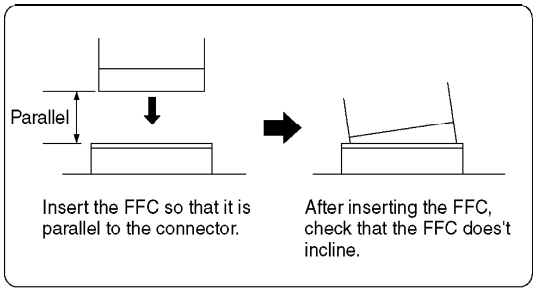
10.6. Digital P.C.B.

1. Remove 2FFCs and 2 Screws (A).

2. Lift up Digital P.C.B. slightly so to disconnect Connector to remove Digital P.C.B.



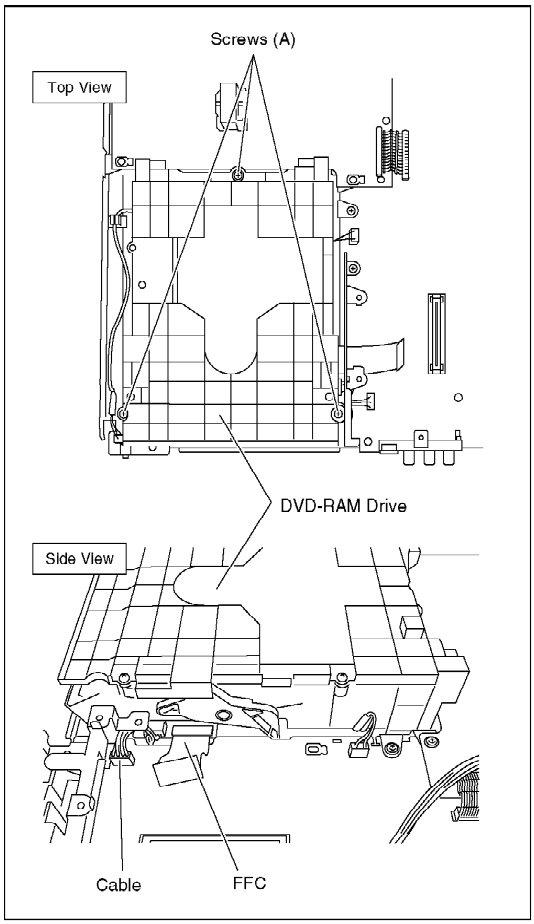
CAUTION:
When replacing Digital P.C.B., pay attention as below.



10.7. DVD-RAM Drive

1. Remove 3 Screws (A) to remove DVD-RAM Drive.

2. Lift up DVD-RAM Drive slightly and remove FFC and remove Cable between DVD-RAM Drive and Main P.C.B.



10.8. HDD

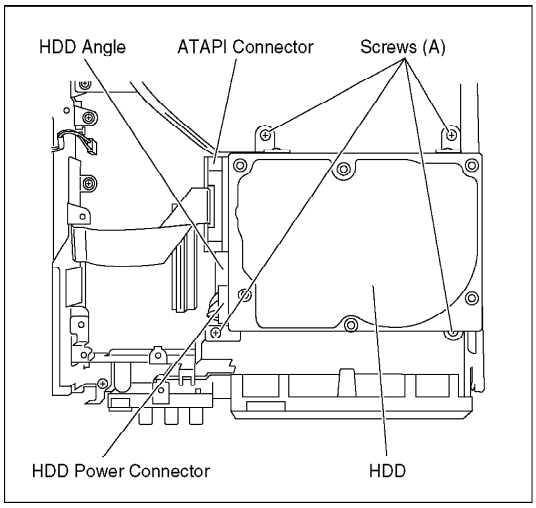
When replacing with Digital P.C.B., "UNFORMAT" indication is displayed and HDD must be formatted.
After that, **programme in the HDD will be lost**.

- How to format the HDD -

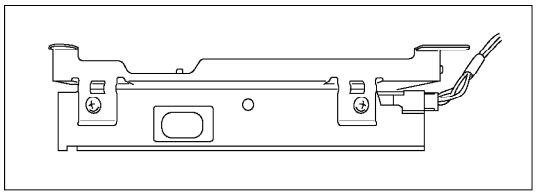
1) After "UNFORMAT" is displayed on the FL display, warning message for HDD format is appeared on the TV screen.
2) Select "YES" and press "ENTER" button on the remote controller, HDD will be formatted automatically.

1. Remove ATAPI Connector and HDD Power Connector.

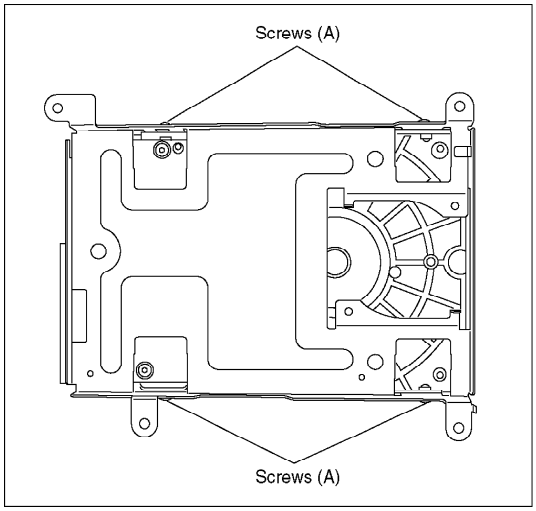
2. Remove 4 Screws (A) to remove HDD Angle with HDD.



3. Put HDD with HDD Angle up and down inversely so as not to give a shock to HDD.

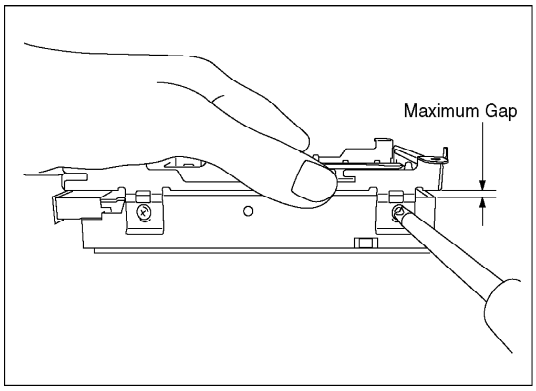


4. Remove 4 screws to remove HDD.



Caution for Attaching HDD

Put HDD up and down inversely so as not to give a shock to HDD, and put HDD Angle on to HDD and tighten 4 screws while lifting HDD Angle so as to keep maximum gap between HDD and HDD Angle.



Handling of HDD

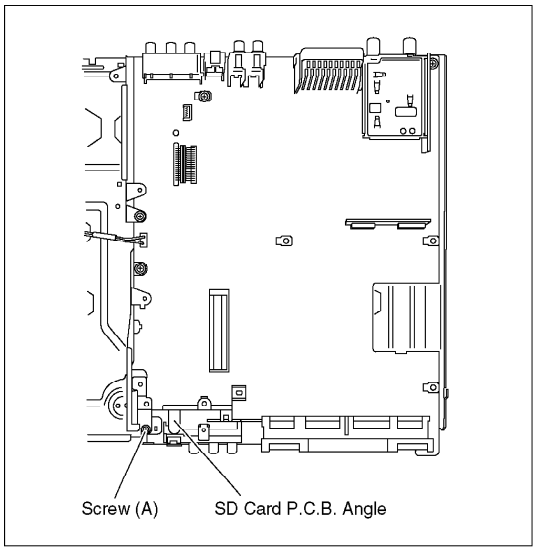
The following precautions should be taken when handling HDD.

1. Never give an impact to HDD. (Even a drop from 1cm height can be a cause of HDD failure.
2. When placing HDD on a workbench, provide a mat on a bench for shock absorption and anti-static purposes.
3. When installing HDD, release it from your hands only after confirming that it is fully set on the chassis.
4. Avoid stacking up HDD.
5. HDD is unstable and easy to fall. Do not stand it on its side face.
6. When handling HDD, hold its side faces to avoid static hazard.
7. Do not place HDD on its wrapping bag after removal. (Prevention of static hazard
8. Use a screwdriver with low impact and anti-static features.

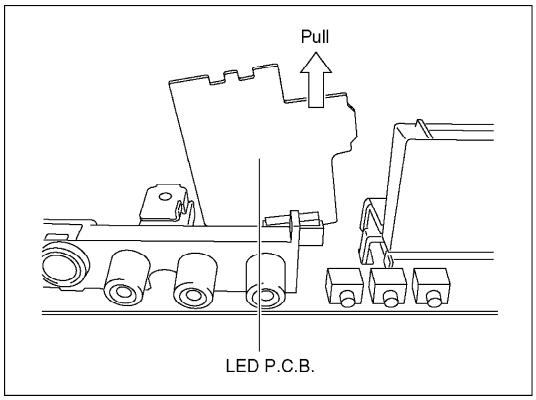
Note:
When replacing HDD, please make the rear jumper slave or cable select configuration.

10.9. LED P.C.B.

1. Remove a Screw (A) to remove SD Card P.C.B. Angle.

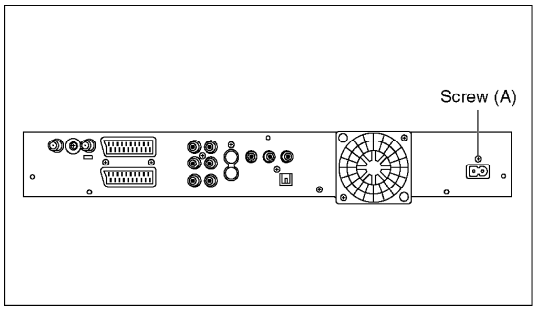


2. At first disconnect the connector on one side as shown below, and pull out LED P.C.B.

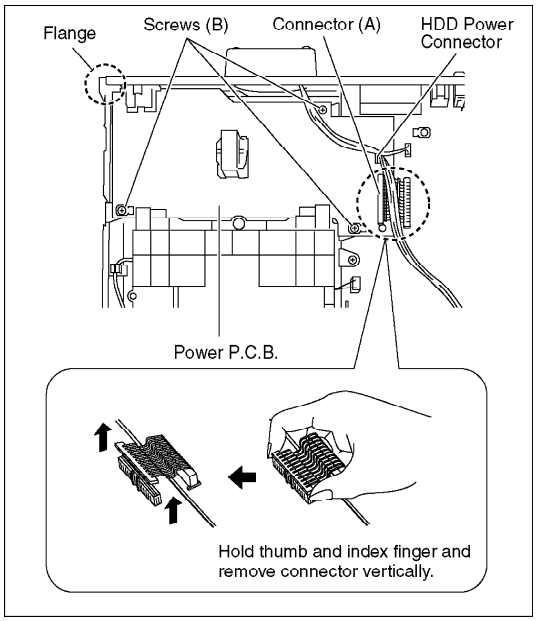


10.10. Power P.C.B.

1. Remove Screw (A).

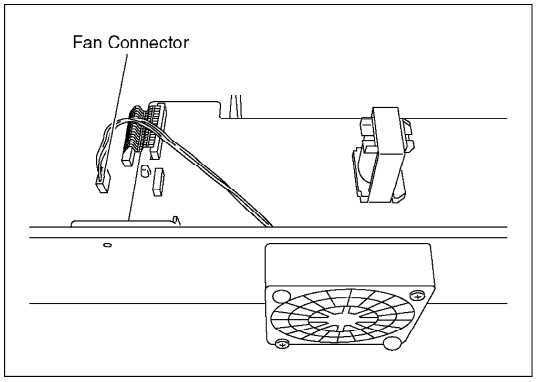


2. Remove 3 Screws (B) and disconnect Connector (A) and HDD Power Connector.
3. Unlock Power P.C.B. from a Flange to remove Power P.C.B.

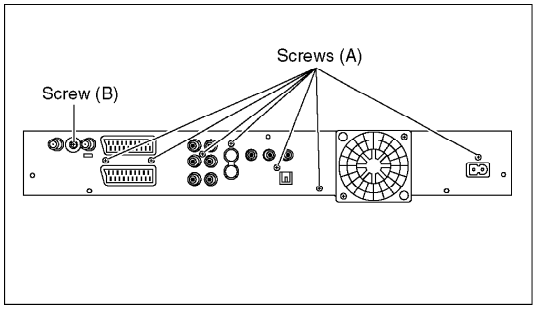


10.11. Rear Panel

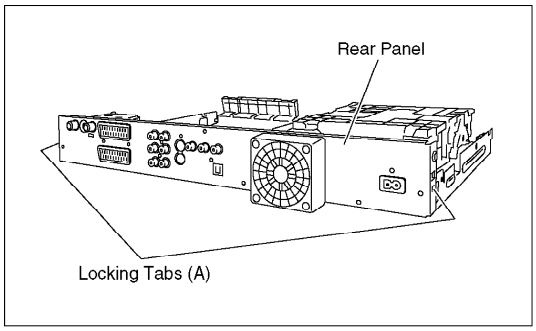
1. Disconnect Fan Connector.



2. Remove 7 Screws (A) and Screw (B).



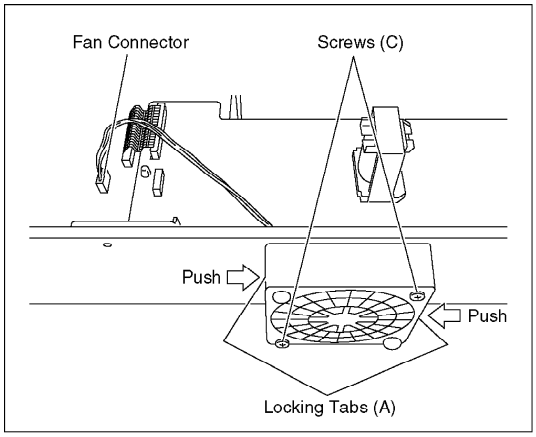
3. Unlock 2 Locking Tabs (A) to remove Rear Panel.



10.11.1. Fan Motor

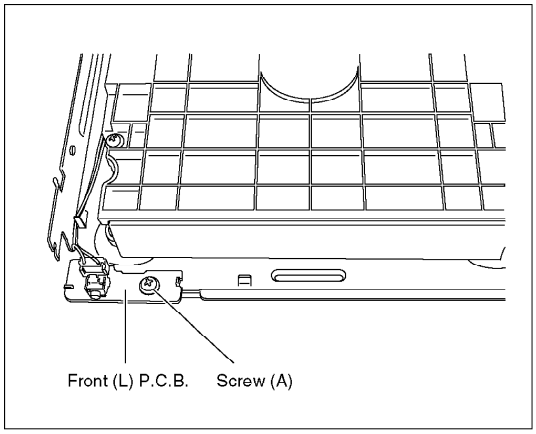
1. Disconnect Fan Connector and remove 2 Screws (C).

2. Push and unlock 2 locking Tabs (A) to remove Fan Motor.



10.12. Front (L) P.C.B.

1. Remove a Screw (A) to remove Front (L) P.C.B.

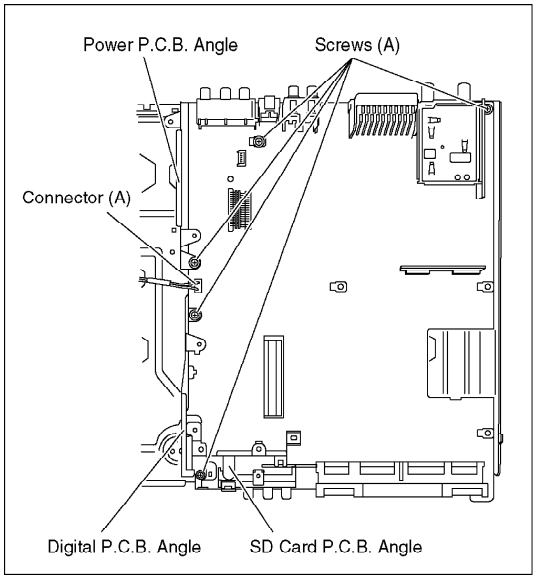


10.13. Main P.C.B.

1. Disconnect Connector (A) for Front (L) P.C.B.

2. Remove 5 Screws (A),.

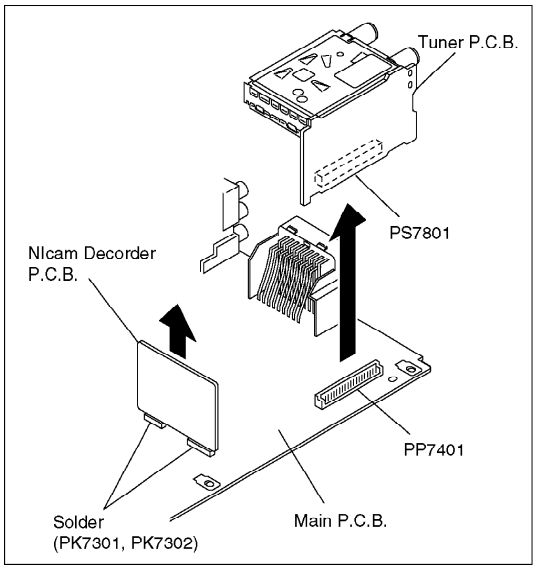
3. Remove Power P.C.B. Angle, Digital P.C.B. Angle and SD Card P.C.B. Angle and disconnect Connector (A) to remove Main P.C.B.



10.14. Tuner P.C.B. and Nicam Decoder P.C.B.

1. Pull out the Tuner P.C.B. in the direction of the arrow.

2. Remove the solders and pull out the Nicam Decoder P.C.B.



11. Service Fixture and Tools

Part Number	Description	Compatibilit
RFKZ0125	Extension FFC (Digital P.C.B. - DVD-RAM Drive / 40 Pin)	Same as E50/ E55 s
RFKZ0126	Extension Cable (MainP.C.B. - DVD-RAM Drive/ 4 Pin)	Same as E30/HS2 s
RFKZ0216	Extension Cable (MainP.C.B. - Power P.C.B. / 23 Pin)	Same as E55 series
RFKZ0260	Extension Cable (MainP.C.B. - Digital P.C.B. / 88 Pin)	New

12. Service Positions

Note:
For description of the disassembling procedure, see the section 10.

12.1. Checking and Repairing of Power P.C.B.

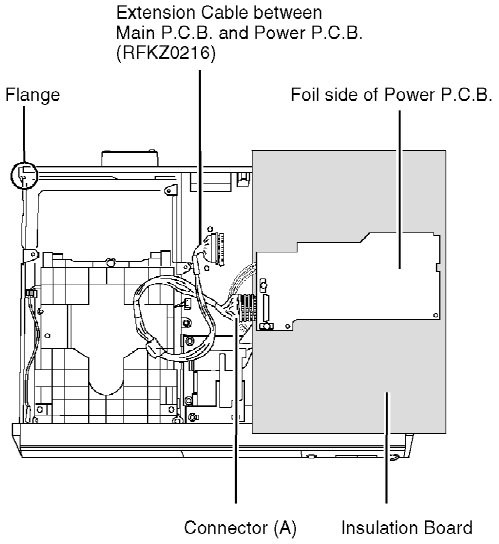
1. Top Case

- Remove 2 Screws (A) on side
- Remove 3 rear Screws (B) on rear
- Remove Top Case

2. Power P.C.B.

- Remove 1 Screw for AC Inlet fixing
- Remove 3 Screws fixing Power P.C.B.
- Remove Connector (A) to Main P.C.B.
- Unlock Power P.C.B. from a Flange to remove Power P.C.B.
- Connect Extension Cable between Main P.C.B. and Power P.C.B. (RFKZ0216).
- Put Power P.C.B. on Insulation Board so that it's foil side faces top.

Caution 1:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.



12.2. Checking and Repairing of Digital P.C.B.

1. Top Case

Remove 2 Screws (A) on side

Remove 3 rear Screws (B) on rear

Remove Top Case

2. Front Panel

Unlock 2 Locking Tabs on side

Unlock 3 Locking Tabs on bottom

Remove Front Panel

3. SD Card P.C.B.

Remove 2 Screws

Remove SD Card P.C.B.

4. Digital P.C.B.

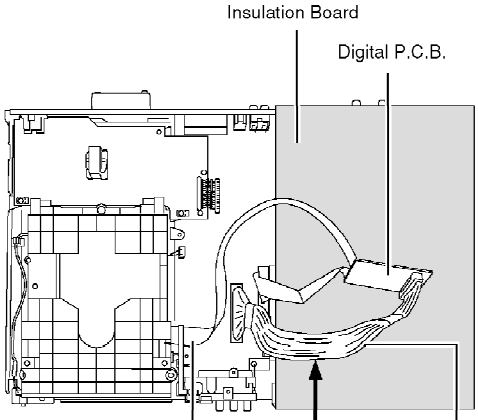
Remove FFC from Digital P.C.B. for RAM

Remove 2 Screws fixing Digital P.C.B.

Lift up Digital P.C.B. Slightly to remove it

Remove 3 Screws fixing RAM Drive. While lifting up DVD-RAM Drive slightly, remove FFC and connect Extension Cables between DVD-RAM Drive and Digital P.C.B. (RFKZ0125). Connect Extension Cable between Main P.C.B. and Digital P.C.B. (RFKZ0260).

Caution 1:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.



12.3. Checking and Repairing of Main P.C.B.

1. Top Case

- Remove 2 Screws (A) on side
- Remove 3 rear Screws (B) on rear
- Remove Top Case

2. Front Panel

- Unlock 2 Locking Tabs on side
- Unlock 3 Locking Tabs on bottom
- Remove Front Panel

3. Fan Motor

- Remove 2 Screws fixing Fan Motor
- Disconnect Fan Cable Connector
- Unlock 2 Locking Tabs to remove Fan Motor

4 . Rear Panel

- Remove 8 Screws (one is for Tuner)
- Unlock 2 Locking Tabs on side
- Remove Rear Panel

5. Power P.C.B.

- Remove 3 Screws fixing Power P.C.B.
- Remove Connector (A) to Main P.C.B.
- Unlock Power P.C.B. from a Flange to remove Power P.C.B.

6. SD Card P.C.B.

- Remove 2 Screws
- Remove SD Card P.C.B.

7. Digital P.C.B.

- Remove FFC from Digital P.C.B.
- Remove 2 Screws fixing Digital P.C.B.
- Lift up Digital P.C.B. slightly to remove it

8. HDD

- Remove 4 Screws fixing HDD Angle to remove it with HDD

9. Digital P.C.B. Angle & SD Card P.C.B. Angle

- Remove 2 Screws to remove Digital P.C.B. Angle and SD Card P.C.B. Angle

10. DVD-RAM Drive

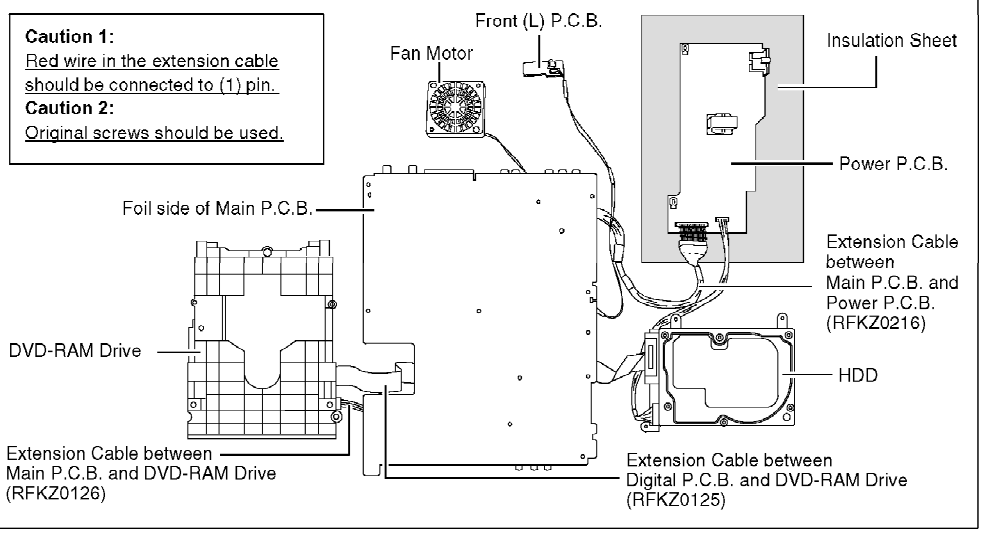
- Remove Cable between RAM Drive and Main P.C.B.
- Remove 3 Screws fixing RAM-Drive
- Lift up DVD-RAM Drive to remove it
- Remove FFC from DVD-RAM Drive

11. Main P.C.B.

- Remove a Screw to remove Front (L) P.C.B.
- Unlock Clamper for Main-Front (L) Cable
- Remove a Screw to remove Power P.C.B. Angle
- Remove 2 Screws to remove Main P.C.B.

Attach Digital P.C.B. on to Main P.C.B.
Connect Fan Connector.
Connect Extension Cables between Main P.C.B. and DVD-RAM Drive (RFKZ0126), betweenDigital P.C.B. and DVD-RAM Drive (RFKZ0125), and between Main P.C.B. and Power P.C.B. (RFKZ0216)

Caution 1:
Red wire in the extension cable should be connected to (1) pin.
Caution 2:
Original screws should be used.


Front (L) P.C.B.
Fan Motor
Insulation Sheet
Power P.C.B.
Foil side of Main P.C.B.
Extension Cable between Main P.C.B. and Power P.C.B. (RFKZ0216)
DVD-RAM Drive
HDD
Extension Cable between Main P.C.B. and DVD-RAM Drive (RFKZ0126)
Extension Cable between Digital P.C.B. and DVD-RAM Drive (RFKZ0125)

12.4. Checking and Repairing of DVD-RAM Drive

1. Top Case

- Remove 2 Screws (A) on side
- Remove 3 rear Screws (B) on rear
- Remove Top Case

2. Front Panel

- Unlock 2 Locking Tabs on side
- Unlock 3 Locking Tabs on bottom
- Remove Front Panel

3. SD Card P.C.B.

- Remove 2 Screws
- Remove SD Card P.C.B.

4. Digital P.C.B.

- Remove FFC from Digital P.C.B. for DVD-RAM Drive
- Remove 2 Screw fixing Digital P.C.B.
- Lift up Digital P.C.B. slightly to remove it

5. DVD-RAM Drive

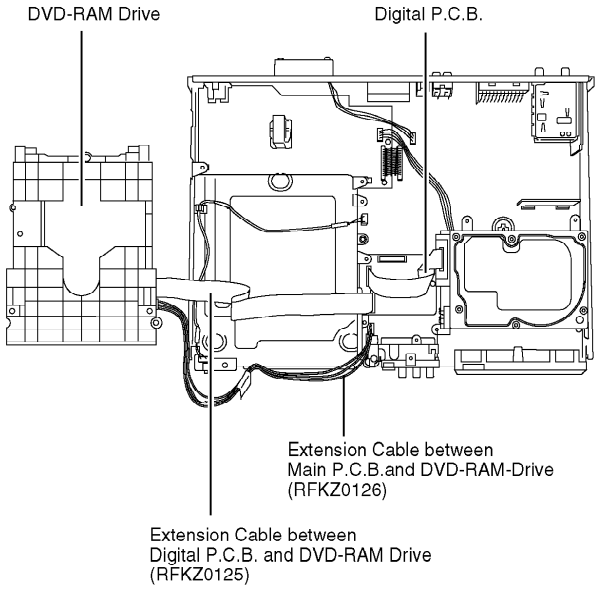
- Remove 3 Screws fixing RAM Drive
- Lift up DVD-RAM Drive slightly and remove FFC from DVD-RAM Drive and remove Cable between DVD-RAM Drive and Main P.C.B.

Attach Digital P.C.B.

Put DVD-RAM Drive on side.

Connect Extension Cables between Main P.C.B. and DVD-RAM Drive, (RFKZ0126), and between Digital P.C.B. and DVD-RAM Drive (RFKZ0125).

Caution :
Original screws should be used.



12.5. Checking and Repairing of HDD

1. Top Case

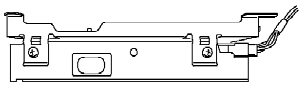
- Remove 2 Screws (A) on side
- Remove 3 Screws (B) on rear
- Remove Top Case

2. HDD

- Disconnect HDD ATAPI Connector
- Remove 4Pin Power Cable from HDD
- Connect HDD ATAPI Connector to Replacement HDD
- Connect 4Pin Power Cable to Replacement HDD
- Put Replacement HDD on Insulation Board

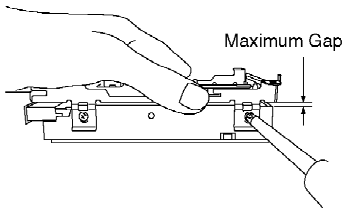
Caution for Removing HDD

Put HDD with HDD Angle up and down inversely and remove 4 screws to remove HDD so as not to give a shock to HDD.

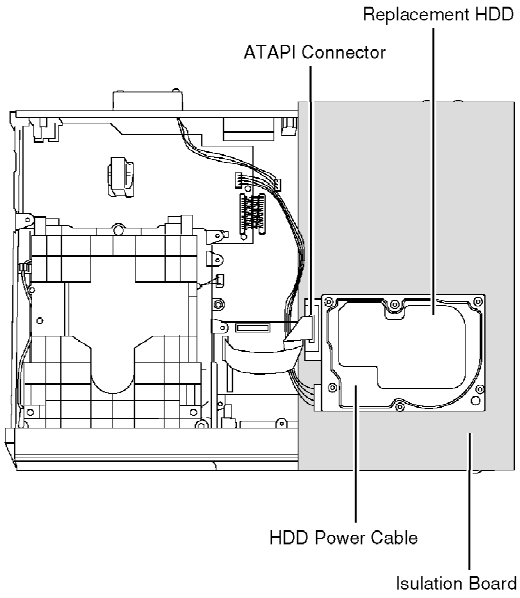


Caution for Attaching HDD

Put HDD up and down inversely, and put HDD Angle on to HDD and tighten 4 screws while lifting HDD Angle so as to keep maximum gap between HDD and HDD Angle.



Caution :
Original screws should be used.



13. Caution after replacing parts

13.1. After replacing the RAM Drive with new one

After replacing RAM drive unit, TEST mode is not necessary. Please confirm operation for RAM drive

13.2. When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B.

When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B. with new one, reset Timer Microprocessor.

Step	Operation	Descriptions
1	While power is ON, short IC7502-4 pin (RESET) and the GND momentarily.	"RESET (L)" is transmitted to th of Timer Microprocessor (IC750 then the unit operates normally.

14. Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be reco
3	Enter the EE (TU IN / AV IN - AV OUT) mode.	No abnormality should be seen in the pic sound or operation.
4	Perform auto recording and playback for one minute using the RAM disc.	No abnormality should be seen in the pic sound or operation. *Panasonic DVD-RAM disc should be use recording and playback.
5	Model with the HDD: Perform auto recording and playback for one minute using the HDD.	No abnormality should be seen in the pic sound or operation.
6	If a problem is caused by a VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the pic sound or operation.
7	Models with SD Card Slot or DV Input Jack: In case of that the trouble is caused by SD card and/ or DV terminal.	Models with SD Card Slot or DV Input Jac 1) SD card: Check to be able to display a the picture. 2) DV terminal: Check to be able to recor DVC.
8	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appear FL displays. *[UNSUPPORT] display means the unit is updated to newest same version. Then ve up is not necessary.
9	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR SERV] appears in th display. After checking it, turn the power off.
10	When replacing of RAM drive, transfer [9] [5] in the service mode setting to delete Laser used time.	Make sure that [CLR LASER] appears in t display. After that, turn power off.

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents
Picture	Block noise		Sound	Distorted sound
	Crosscut noise			Noise (static, background noise, etc.)
	Dot noise			The sound level is too low.
	Picture disruption			The sound level is too high.
	Not bright enough			The sound level changes.
	Too bright			
	Flickering color			
	Color fading			

15. Voltage and Waveform Chart

Note)
Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point, because it may differ from an actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

15.1. Power P.C.B.

15.2. Main P.C.B.

15.3. Tuner P.C.B.

15.4. LED P.C.B.

15.5. P9001 Connector

15.6. Waveform Chart

16. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	
	ASI	AUDIO RF
	ASO	SERVO AMP INVERTED INPUT
	ASYNC	SERVO AMP OUTPUT
		AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR
	CBDO	VELOCITY
	CD	CAP. BLACK DROP OUT
	CDSCK	COMPACT DISC
	CDSRDATA	CD SERIAL DATA CLOCK
		CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT

INITIAL/LOGO		ABBREVIATIONS
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/ 40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE

INITIAL/LOGO		ABBREVIATIONS
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORY SERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK / PLLOK	CHANNEL PLL CLOCK PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVE A
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET
		RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECT CLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUB CODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY
	STVALID	SELECT
	SUBC	STREAM DATA VALIDITY
	SBCK	SUB CODE SERIAL
	SUBQ	SUB CODE CLOCK
	SYSCLK	SUB CODE Q DATA

	SYSCLK	SYSTEM CLOCK

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE X VERTICAL SYNC OUTPUT

17. Block Diagram

17.1. Power Supply Block Diagram

17.2. Analog Video Block Diagram

17.3. Analog Audio Block Diagram

17.4. Timer Block Diagram

18. Schematic Diagram

18.1. Interconnection Schematic Diagram

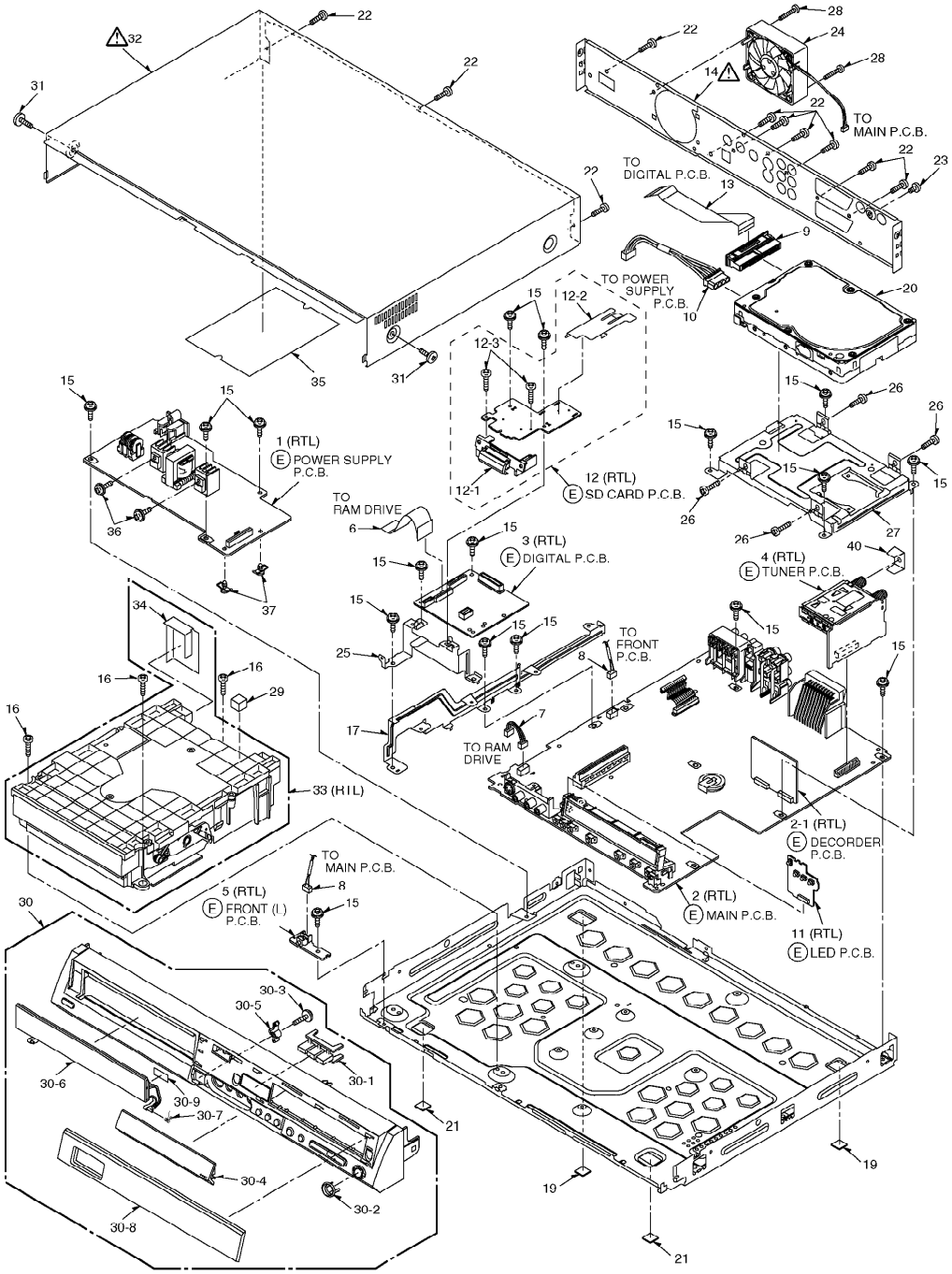
18.2. Power Supply Schematic Diagram

18.3. Main Net Section (Main P.C.B. (1/3)) Schematic Diagram (M)

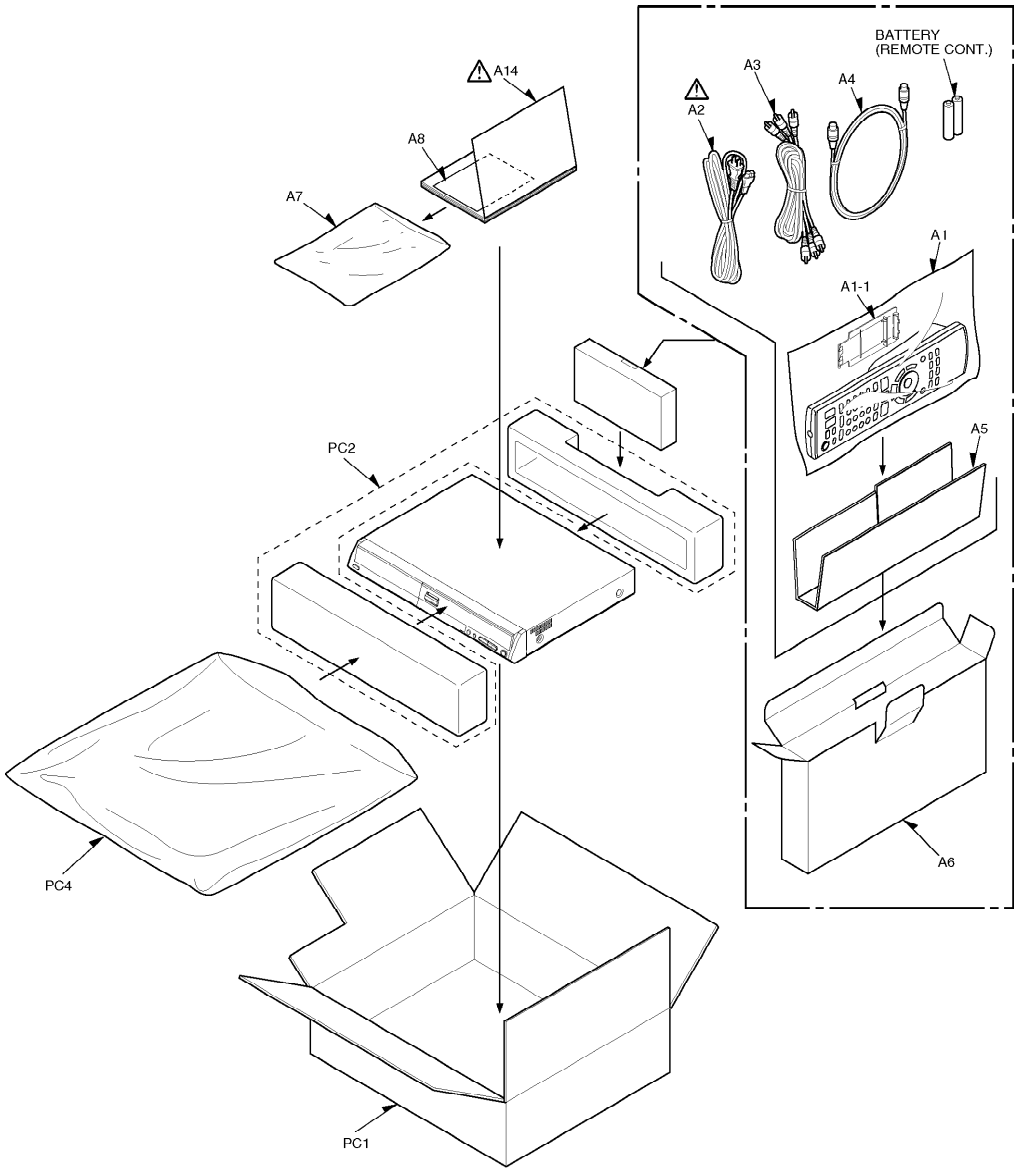
18.4. A/V I/O Section (Main P.C.B. (2/3)) Schematic Diagram (AI)

18.5. Timer Section (Main P.C.B. (3/3)) Schematic Diagram (T)

18.6. Tuner Pack Schematic Diagram
18.7. Nicam Decoder Schematic Diagram
18.8. SD Card Schematic Diagram
18.9. LED Schematic Diagram
19. Print Circuit Board
19.1. Power P.C.B.
19.2. Main P.C.B.
19.2.1. Main P.C.B. (1/4 Section)
19.2.2. Main P.C.B. (2/4 Section)
19.2.3. Main P.C.B. (3/4 Section)
19.2.4. Main P.C.B. (4/4 Section)
19.2.5. Main P.C.B. Address Information
19.3. Tuner P.C.B., LED P.C.B., Front (L) P.C.B.
19.4. Nicam Decoder P.C.B.
19.5. SD Card P.C.B.
20. Exploded Views
20.1. Casing Parts & Mechanism Section



20.2. Packing & Accessories Section



21. Replacement Parts List

Notes:
***Important safety notice:**
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.
***Warning: This product uses a laser diode. Refer to caution statements.**
***Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F= Farads (F).**
***Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).**
***The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.**
***"(IA)-(IG)", marks in Remarks indicate languages of instruction manuals. [(IA): Polish, (IB):**

Spanish/French, (IC): German, (ID): Swedish/Denish, (IE): English, (IF): Italian/Dutch, (IG): English]
***All parts except parts mentioned [SPC] in the Remarks column are supplied from PAVCG.**
***Parts mentioned [SPC] are supplied from PAVC**

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	01	CASING/ACCESSORY/PACKING	1	
1	VEP01961A	POWER SUPPLY P.C.B.	1	(RTL)
2	VEP79107J	MAIN P.C.B.	1	(RTL)(EB)
2	VEP79107H	MAIN P.C.B.	1	(RTL)(EG)
2	VEP79107N	MAIN P.C.B.	1	(RTL)(EP)
2-1	VEP07A51A	DECORDER P.C.B.	1	(RTL)
2-2	VEP07A77B	TUNER P.C.B.	1	(RTL)(EB)
2-2	VEP07A77A	TUNER P.C.B.	1	(RTL)(EG)
3	RFKBEH50EB	DIGITAL P.C.B.	1	(RTL)(EB)
3	VEP79106B	DIGITAL P.C.B.	1	(RTL)(EH50EG)(EH52EG)
3	RFKBEH50EP	DIGITAL P.C.B.	1	(RTL)(EP)
4	VEP07A77C	TUNER P.C.B.	1	(RTL)(EP)
5	VEP70115A	FRONT(L) P.C.B.	1	(RTL)
6	VWJ1775	FFC(40P)	1	
7	VEE1A60	WIRE WITH CONNECTOR(4P)	1	
8	VEE1A61	WIRE WITH CONNECTOR(2P)	1	
9	K1MZ40Z00002	HDD CONNECTOR	1	
10	VEE1A71	HDD CABLE(4P)	1	
11	VEP70116B	LED P.C.B.	1	(RTL)
12	VEP73121C	SD CARD P.C.B.	1	(RTL)(K)
12	VEP73121D	SD CARD P.C.B.	1	(RTL)(S)
12-1	RYQ0556-K	CARD HOLDER ASS'Y	1	(K)
12-1	RYQ0556A-S	CARD HOLDER ASS'Y	1	(S)
12-2	RMV0298	FFC HOLDER	1	
12-3	XTN2+8GFJ	SCREW	2	
13	VWJ1780	FFC(40P)	1	
14	RGR0354F-B	REAR PANEL	1	(EB) ⚠
14	RGR0354F-A	REAR PANEL	1	(EH50EG) ⚠
14	RGR0354F-C	REAR PANEL	1	(EP) ⚠
14	RGR0354F-L	REAR PANEL	1	(EH52EG) ⚠
15	RHD30111-3	SCREW	17	
16	RHD30115-3	SCREW	3	
17	RMA1915	DIGITAL ANGLE	1	
19	RKA0177-K	LEG CUSHION	2	
20	RFKV0047HDK	HDD 80GB	1	
21	RKA0166-T	LEG RUBBER	2	
22	VHD0690	SCREW	10	
23	XSN3+4FJK	SCREW	1	
24	L6FAKCCE0003	FAN MOTOR	1	
25	RMA1910	SD CARD ANGLE	1	
26	RHD32001	SCREW	4	
27	RMN0823	HDD ANGLE	1	
28	XTB3+25JFJK	SCREW	2	
29	RMX0325	MECHA SPACER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
30	RYP1269C-S	FRONT PANEL ASS'Y	1	(EH50EG-S)
30	RYP1269D-S	FRONT PANEL ASS'Y	1	(EB)
30	RYP1269G-S	FRONT PANEL ASS'Y	1	(EP)
30	RYP1269T-S	FRONT PANEL ASS'Y	1	(EH52EG-S)
30	RYP1269C-K	FRONT PANEL ASS'Y	1	(EH50EG-K)
30	RYP1269T-K	FRONT PANEL ASS'Y	1	(EH52EG-K)
30-1	RGL0678-Q	PANEL LIGHT	1	
30-2	RGK1885-S	REC BUTTON RING	1	
30-3	RHD26045	SCREW	1	
30-4	RKF0729E-K	PANEL DOOR	1	(K)
30-4	RKF0729E-S	PANEL DOOR	1	(S)
30-5	RMR1698-S	SHAFT HOLDER	1	
30-6	RKF0728A-K	TRAY DOOR	1	(EB,EH50EG,EP)
30-6	RKF0728D-K	TRAY DOOR	1	(EH52EG)
30-7	VMB3410	TRAY SPRING	1	
30-8	RGK1886A-Q	FL ORNAMENT	1	
30-9	RMX0302	DOOR DAMPER	1	
31	RHD30113	SCREW	2	(S)
31	RHD30113-1K	SCREW	2	(K)
32	RKM0532A-K	TOP CASE	1	(K) ⚠
32	RKM0532A-S	TOP CASE	1	(S) ⚠
33	RFKNVXY1872	RAM DRIVE UNIT	1	(RTL)(SPC)
34	RMV0302	BARRIER	1	(SPC)
35	RMV0301	BARRIER	1	
36	XYN3+F8FJ	SCREW	2	
37	RMX0323	PCB SPACER	2	
40	RMC0625	TUNER GND	1	
A1	EUR7729KE0	REMOTE CONTROL ASS'Y	1	(EB)
A1	EUR7729KC0	REMOTE CONTROL ASS'Y	1	(EG)
A1	EUR7729KD0	REMOTE CONTROL ASS'Y	1	(EP)
A1-1	UR77EC2903A	BATTERY COVER	1	
A2	RJA0044-3C	AC CORD	1	(EB) ⚠
A2	RJA0043-1C	AC CORD	1	(EG,EP) ⚠
A3	K2KA6CA00001	AV CORD	1	
A4	K1TWACC00001	RF COAXIAL CABLE	1	
A5	RPQ1594	PAD	1	
A6	RPQFD0008	ACCESSORY BOX	1	
A7	XZB24X37C04X	POLYETHYLENE BAG(F.B)	1	(EB,EP)
A7	RPFD0005	POLYETHYLENE BAG(F.B)	1	(EG)
A8	RQTD0150-A	EPG INSTRUCTIONS	1	(EG)
A14	RQT8034-R	OPERATING INSTRUCTIONS	1	(IA)(EP) ⚠
A14	RQT8029-E	OPERATING INSTRUCTIONS	1	(IB)(EH50EG) ⚠
A14	RQT8030-D	OPERATING INSTRUCTIONS	1	(IC)(EH50EG)(EH52EG) ⚠
A14	RQT8031-H	OPERATING INSTRUCTIONS	1	(ID)(EH50EG) ⚠
A14	RQT8033-B	OPERATING INSTRUCTIONS	1	(IE)(EB) ⚠
A14	RQT8032-J	OPERATING INSTRUCTIONS	1	(IF)(EH50EG) ⚠
A14	RQT8027-L	OPERATING INSTRUCTIONS	1	(IG)(EH50EG) ⚠
PC1	RPG7566	PACKING CASE	1	(EB)
PC1	RPG7565	PACKING CASE	1	(EH50EG-S)
PC1	RPG7587	PACKING CASE	1	(EH50EG-K)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
PC1	RPG7567	PACKING CASE	1	(EP)
PC1	RPG7648	PACKING CASE	1	(EH52EG-K)
PC1	RPG7647	PACKING CASE	1	(EH52EG-S)
PC2	RPN1798	CUSHION	1	
PC4	RPFD0004	MIRAMAT BAG	1	
■	03	VEP79107J/H/N	1	MAIN P.C.B.
C1501	F1H1E223A029	25V 0.022U	1	
C1503	F2A1A2210063	10V 220U	1	
C1504	F2A1E1010067	25V 100U	1	
C1505	F1J0J106A014	6.3V 10U	1	
C1506,07	F2A1A470A388	10V 47U	2	
C1508	F1H1H1030006	50V 0.01U	1	
C1509	F1H0J1050012	6.3V 1U	1	
C1510	F1H1A105A028	10V 1U	1	
C1511,12	F1H0J1050012	6.3V 1U	2	
C1515	F2A1A470A388	10V 47U	1	
C1517	ECJ1VC1H471J	50V 470P	1	
C1518	F2A0J681A550	6.3V 680U	1	
C1520	F1H1A105A028	10V 1U	1	
C1521	F1H0J1050012	6.3V 1U	1	
C1522	ECJ1VC1H331J	50V 330P	1	
C1526	F2A1A470A388	10V 47U	1	
C1527	F1J0J106A014	6.3V 10U	1	
C1535	F1H1A105A028	10V 1U	1	
C1536	F1J0J106A014	6.3V 10U	1	
C1538	F1H1A105A028	10V 1U	1	
C1539	F1H0J1050012	6.3V 1U	1	
C1540	F1H1H1030006	50V 0.01U	1	
C3001	F1H1C104A042	16V 0.1U	1	
C3002	F1H1H1030006	50V 0.01U	1	
C3003,04	F1H1C104A042	16V 0.1U	2	
C3005,06	F2A0J471A016	6.3V 470U	2	
C3007	F2A1A4710038	10V 470U	1	
C3008	F2A1A1010072	10V 100U	1	
C3009	F2A1A4710038	10V 470U	1	
C3010	F2A1A1010072	10V 100U	1	
C3011	F1H1C104A042	16V 0.1U	1	
C3012	F2A1A4710038	10V 470U	1	
C3013	F2A1A1010072	10V 100U	1	(EG,EP)
C3013	F2A1E4700048	25V 47U	1	(EB)
C3014-22	F1H1C104A042	16V 0.1U	9	
C3025	F1H1C104A042	16V 0.1U	1	
C3026	F1H0J1050012	6.3V 1U	1	
C3027	F1H1C104A042	16V 0.1U	1	
C3028	ECEA1HKA4R7B	50V 4.7U	1	
C3029	F1H1C104A042	16V 0.1U	1	
C3030	ECEA1HKA4R7B	50V 4.7U	1	
C3031	F1H1H1030006	50V 0.01U	1	
C3032	ECEA0JKA101B	6.3V 100U	1	
C3033,34	F1H1H1030006	50V 0.01U	2	
C3035	ECEA0JKA101B	6.3V 100U	1	
C3038,39	F1H1C104A042	16V 0.1U	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3057	F1H1H222A219	50V 2200P	1	
C3058	ECJ1VC1H471J	50V 470P	1	
C3059	F1H1H222A219	50V 2200P	1	
C3060	ECJ1VC1H471J	50V 470P	1	
C3064	F1H1C104A042	16V 0.1U	1	
C3070,71	F1H1H222A219	50V 2200P	2	
C3072	F1H1C104A042	16V 0.1U	1	
C3910,11	F2A1V100A534	35V 10U	2	
C3914,15	F2A1H100A236	50V 10U	2	
C3916,17	F2A1H1R0A236	50V 1U	2	
C3918,19	F2A1H100A236	50V 10U	2	
C3928	F2A1V100A534	35V 10U	1	
C3929	F2A1H1R0A638	50V 1U	1	
C3935	F2A1E2210050	25V 220U	1	
C3951,52	F1H1H4700004	50V 47P	2	
C3953,54	ECJ1VC1H471J	50V 470P	2	
C3955,56	ECJ1VC1H221J	50V 220P	2	
C3957,58	ECJ1VC1H471J	50V 470P	2	
C3961,62	ECJ1VC1H221J	50V 220P	2	
C4003	F1H0J1050012	6.3V 1U	1	
C4005	F2A1H2200032	50V 22U	1	
C4006	F2A1V100A534	35V 10U	1	
C4008	F2A1E1010067	25V 100U	1	
C4011	F2A1H100A236	50V 10U	1	(EB)
C4018	F2A1H4R7A236	50V 4.7U	1	(EB)
C4019	F2A1V100A534	35V 10U	1	
C4021	F2A1V100A534	35V 10U	1	
C4023	F2A1V100A534	35V 10U	1	
C4024	F2A1E1010067	25V 100U	1	
C4025	F2A1V100A534	35V 10U	1	
C4027	F2A1H2200032	50V 22U	1	
C4028	F2A1V100A534	35V 10U	1	
C4033,34	F2A1C220A709	16V 22U	2	
C4055	F1H1C104A008	16V 0.1U	1	
C4056	F2A1C471A628	16V 470U	1	
C4057	ECJ2VC1H330J	50V 33P	1	
C4059	ECQV1H104JL3	50V 0.1U	1	
C4060	ECJ2VC1H330J	50V 33P	1	
C4061	F1H1C104A008	16V 0.1U	1	
C4062	F2A1C221A637	16V 220U	1	
C4063,64	F2A1C220A709	16V 22U	2	
C4065	F1H1C104A008	16V 0.1U	1	
C4067	F2A1E2210050	25V 220U	1	
C4070	F2A1C221A637	16V 220U	1	
C4072	F2A1C221A637	16V 220U	1	
C4077	F1H1C104A008	16V 0.1U	1	
C4082,83	ECJ2VC1H561J	50V 560P	2	
C4092	F2A1C101A637	16V 100U	1	
C4901	F2A0J470A599	6.3V 47U	1	
C4902	F1H1C104A008	16V 0.1U	1	
C4903	F2A1E4700048	25V 47U	1	
C4904	F1H1C104A008	16V 0.1U	1	
C7401	F2A1C471A628	16V 470U	1	
C7402	ECJ1VC1H471J	50V 470P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7403	F2A0J470A599	6.3V 47U	1	
C7404	F1H0J1050012	6.3V 1U	1	
C7405	F1H1C104A042	16V 0.1U	1	
C7406	F1H1A105A028	10V 1U	1	
C7407,08	F1H1C104A042	16V 0.1U	2	
C7416	F2A1E4700048	25V 47U	1	
C7427	F1H1H222A219	50V 2200P	1	
C7439	F1H1C104A042	16V 0.1U	1	
C7447,48	F1H0J1050012	6.3V 1U	2	
C7501	F1J0J475A008	6.3V 4.7U	1	
C7502	F1H1H1010005	50V 100P	1	
C7503	F1J0J475A008	6.3V 4.7U	1	
C7504,05	F1H1C104A042	16V 0.1U	2	
C7507	F1H1C104A008	16V 0.1U	1	
C7510	F1H1C104A042	16V 0.1U	1	
C7511	F1H1H1010005	50V 100P	1	
C7512	F1H1C104A008	16V 0.1U	1	
C7516,17	ECJ1VC1H180J	50V 18P	2	
C7518	ECJ1VC1H220J	50V 22P	1	
C7519	ECJ1VC1H180J	50V 18P	1	
C7520	F1H1C104A042	16V 0.1U	1	
C7522	F1H1H1010005	50V 100P	1	
C7523	F1H1H1030006	50V 0.01U	1	
C7524	F1H1C104A042	16V 0.1U	1	
C7528	F1H1C104A008	16V 0.1U	1	
C7529	ECEA0JKA470B	6.3V 47U	1	
C7531,32	ECJ1VC1H100D	50V 10P	2	
C7533	ECEA0JKA470B	6.3V 47U	1	
C7534	F1H1H1030006	50V 0.01U	1	
C7535	F1H1C104A008	16V 0.1U	1	
C7539	F1H1H4700004	50V 47P	1	
C7540	F1H1H1030006	50V 0.01U	1	
C7541	F1H1H4700004	50V 47P	1	
C7542	F1H1C104A042	16V 0.1U	1	
C7543	F1H1H4700004	50V 47P	1	
C7544	F1H1C104A042	16V 0.1U	1	
C7546,47	F1H0J1050012	6.3V 1U	2	
C7550	ECEA0JKA470B	6.3V 47U	1	
C7551	F1H1C104A042	16V 0.1U	1	
C7552,53	ECJ1VC1H221J	50V 220P	2	
C7554,55	F1H1H1030006	50V 0.01U	2	
C7565	F2A1E221A586	25V 220U	1	
C7569	ECQB1H222KF3	50V 2200P	1	
C7570	F2A1V470A533	35V 47U	1	
C7571	F2A1H2200032	50V 22U	1	
C7572	F2A1A2210063	10V 220U	1	
C7573	F2A1H2200032	50V 22U	1	
C7577	F1H1C104A042	16V 0.1U	1	
C7578,79	ECEA0JKA470B	6.3V 47U	2	
C7581	F1H1H1030006	50V 0.01U	1	
C7584	F4D55473A013	CAPACITOR	1	
C7585	ECEA0JKA101B	6.3V 100U	1	
C7587	F1H0J1050012	6.3V 1U	1	
C7588	F1H1H1030006	50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C7590	F1H1C104A008	16V 0.1U	1	
C7592	F1H1A105A004	10V 1U	1	
D1501	MA2C165001VT	DIODE	1	
D3901	MA2C165001VT	DIODE	1	
D4005,06	MA3Z142D0LG	DIODE	2	
D7403	MA2C165001VT	DIODE	1	
D7501	B0BA03600021	DIODE	1	
D7502	B0ACCK000005	DIODE	1	
D7504	MAZ4300NLF	DIODE	1	
D7505,06	B0AADM000003	DIODE	2	
D7507	B0AAGM000007	DIODE	1	
D7508	MAZ4240NMF	DIODE	1	
D7509	B0JDCE000002	DIODE	1	
DP7501	A2BD00000099	FL DISPLAY TUBE	1	
IC1501	C0CBCDD00006	IC	1	
IC1502	C0CBCBD00018	IC	1	
IC1504	C0CBCYH00003	IC	1	
IC1505	C0CBCBD00018	IC	1	
IC1510	C0CBCDG00006	IC	1	
IC1511	C0CBCDD00008	IC	1	
IC3001	C1AB00002100	IC	1	
IC4009	C0ABBB000216	IC	1	
IC4011	C0DBAHD00013	IC	1	
IC4012	C0ABBB000118	IC	1	
IC7401	C0CBCYG00004	IC	1	
IC7402	C0DBCHD00004	IC	1	
IC7403	C0CBCDD00006	IC	1	
IC7501	C2CBKH000136	IC	1	
IC7502	C0EBE0000504	IC	1	
IC7503	C3EBJC000055	IC	1	
IC7504	C1ZBZ0002791	IC	1	
IC7505	C0EBJ0000336	IC	1	
IC7506	C0EBE0000457	IC	1	
IC7507	C0ABBA000146	IC	1	
IP1501	K5H3022A0013	IC PROTECTOR	1	⚠
IP7501	K5H7512A0010	IC PROTECTOR	1	⚠
IR7501	B3RAD0000092	REMOTE SENSOR	1	
JK3001	K2HA612B0055	JACK,AV4/IN	1	
JK3002	K1U415B00001	JACK,AV3/IN	1	
JK3003	K2HA210B0002	JACK,S-VIDEO	1	
JK3901	K1FB242B0004	JACK,AV1/2	1	(EB)
JK3901	K1FB242B0005	JACK,AV1/2	1	(EG,EP)
JK3903	K1U407B00006	JACK,AV OUT	1	
K3901	D0YBR0000002	CHIP RESISTOR	1	(EP)
K4002	D0YDR0000006	CHIP RESISTOR	1	
K4012	D0YBR0000002	CHIP RESISTOR	1	(EB)
K7401	D0YBR0000002	CHIP RESISTOR	1	(EB)

R1401	[illegible]	CHIP RESISTOR	1	(ZZ)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
K7405,06	D0YBR0000002	CHIP RESISTOR	2	(EB,EP)
K7503,04	D0YBR0000002	CHIP RESISTOR	2	
K7506,07	D0YBR0000002	CHIP RESISTOR	2	
K7512	D0YBR0000002	CHIP RESISTOR	1	
L1501	G0A220GA0026	COIL 22UH	1	
L1504	G0A100HA0023	COIL 10UH	1	
L4901	G0C220KA0065	COIL 22UH	1	
L7403	G0C2R2JA0019	COIL 2.2UH	1	
L7404	G0A220GA0026	COIL 22UH	1	
L7501	G0C390JA0055	COIL 39UH	1	
LB1503,04	J0JKB0000003	COIL	2	
LB1506	J0JKB0000003	COIL	1	
LB3001-03	J0JGC0000020	COIL	3	
LB3005-08	J0JBC0000011	COIL	4	
LB3009-11	J0JCC0000103	COIL	3	
LB3012,13	J0JBC0000011	COIL	2	
LB3907,08	J0JBC0000011	COIL	2	
LB3911	J0JGC0000020	COIL	1	
LB3912,13	J0JBC0000011	COIL	2	
LB7401	J0JGC0000020	COIL	1	
LB7406	J0JHC0000032	COIL	1	
LB7408,09	J0JHC0000032	COIL	2	
LB7414,15	J0JHC0000032	COIL	2	
LB7501	D0YBR0000002	CHIP RESISTOR	1	
LB7507,08	J0JGC0000020	COIL	2	
LB7509	J0JCC0000060	COIL	1	
LB7510	J0JGC0000020	COIL	1	
LB7515-17	D0YBR0000002	CHIP RESISTOR	3	
LB7519	J0JKB0000037	COIL	1	
P1501	K1KA23A00003	CONNECTOR(23P)	1	
P1502	K1KA04AA0180	CONNECTOR(4P)	1	
P7402	K1KA88A00002	CONNECTOR(88P)	1	
P7504	K1KA03AA0301	CONNECTOR(3P)	1	
P7506	K1KA03AA0301	CONNECTOR(3P)	1	
P7507	K1KA06AA0288	CONNECTOR(6P)	1	
PP7401	K1KA18AA0288	CONNECTOR(18P)	1	
Q3907-10	2SD132800L	TRANSISTOR	4	(EB,EG)
Q4004	2SB1218ARL	TRANSISTOR	1	
Q4006-09	2SD132800L	TRANSISTOR	4	
Q7401	2SD1819ARL	TRANSISTOR	1	
Q7501	2SB1218ARL	TRANSISTOR	1	
Q7502	2SD1819ARL	TRANSISTOR	1	
Q7503	2SB1218ARL	TRANSISTOR	1	
Q7504	2SD1819ARL	TRANSISTOR	1	
Q7506,07	2SD0601ARN	TRANSISTOR	2	
Q7508	2SD1819ARL	TRANSISTOR	1	
Q7510	2SD1994BR1VT	TRANSISTOR	1	
Q7511	B1ABMD000004	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
QR3914	UNR521300L	TRANSISTOR	1	(EB,EG)
QR4002-05	UNR521100L	TRANSISTOR	4	
QR7401	UNR521300L	TRANSISTOR	1	
QR7403,04	UNR521500L	TRANSISTOR	2	
QR7501	UNR521300L	TRANSISTOR	1	(EG)
QR7503	UNR521400L	TRANSISTOR	1	(EB,EG)
QR7506	UNR521200L	TRANSISTOR	1	
QR7507	UNR521000L	TRANSISTOR	1	
QR7508	UNR521400L	TRANSISTOR	1	
R1503	D0GB332JA002	1/10W 3.3K	1	
R1504	D0GB101JA002	1/10W 100	1	
R1505	ERDS2TJ271T	1/4W 270	1	
R1506	ERJ3RBD103V	1/16W 10K	1	
R1507	ERJ3RBD152V	1/16W 1.5K	1	
R1508	ERJ3RBD153V	1/16W 15K	1	
R1511-13	ERDS2TJ271T	1/4W 270	3	
R1515	ERDS2TJ271T	1/4W 270	1	
R1520	D0GB822JA002	1/10W 8.2K	1	
R3006	D0GB822JA002	1/10W 8.2K	1	
R3007	D0GB330JA002	1/10W 33	1	
R3054-62	D0GB750JA002	1/10W 75	9	
R3901-03	D1BB75R0A010	75	3	
R3912,13	D0GB103JA002	1/10W 10K	2	
R3914	D0GB471JA002	1/10W 470	1	
R3918	D0GB471JA002	1/10W 470	1	
R3919-21	D1BB75R0A010	75	3	
R3922,23	D0GB471JA002	1/10W 470	2	
R3924	ERDS2TJ221T	1/4W 220	1	
R3925-27	D1BB75R0A010	75	3	
R3928-30	D0GB750JA002	1/10W 75	3	
R3932	D0GB750JA002	1/10W 75	1	
R3934,35	D0GB750JA002	1/10W 75	2	
R3975,76	D0GB101JA002	1/10W 100	2	
R3983,84	D0GB103JA002	1/10W 10K	2	
R3987	D0GB473JA002	1/10W 47K	1	
R3988,89	D0GB102JA002	1/10W 1K	2	
R3990,91	D0GB473JA002	1/10W 47K	2	
R3992,93	D0GB102JA002	1/10W 1K	2	
R3994	D0GB473JA002	1/10W 47K	1	
R3995	D0GB153JA002	1/10W 15K	1	(EB,EG)
R3996,97	D0GB124JA002	1/10W 120K	2	(EB,EG)
R3998,99	D0GB154JA002	1/10W 150K	2	(EB,EG)
R4002	D0GB103JA002	1/10W 10K	1	
R4004	D0GB103JA002	1/10W 10K	1	
R4006-08	D0GB823JA002	1/10W 82K	3	
R4010,11	D0GB473JA002	1/10W 47K	2	
R4013	D0GB823JA002	1/10W 82K	1	
R4014	D0GB103JA002	1/10W 10K	1	
R4016	D0GB225JA002	1/10W 2200K	1	(EB)
R4017	D0GB103JA002	1/10W 10K	1	
R4046,47	D0HB752ZA002	1/10W 7.5K	2	
R4055	D0HB123ZA002	1/16W 12K	1	
R4057	D0HB123ZA002	1/16W 12K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4059	D0YBR0000002	CHIP RESISTOR	1	(EB)
R4066,67	D0HB103ZA002	1/10W 10K	2	
R4071	D0GB473JA002	1/10W 47K	1	
R4074	D0GB473JA002	1/10W 47K	1	
R4076	D0GB821JA002	1/10W 820	1	
R4077	D0GB101JA002	1/10W 100	1	
R4078,79	D0GB272JA002	1/10W 2.7K	2	
R4080	D0GB101JA002	1/10W 100	1	
R4081	D0GB821JA002	1/10W 820	1	
R4088,89	D0GB272JA002	1/10W 2.7K	2	
R4090	D0GB221JA002	1/10W 220	1	
R4093	D0GB221JA002	1/10W 220	1	
R4094	D0GB223JA002	1/10W 22K	1	(EG,EP)
R4903	D0YBR0000002	CHIP RESISTOR	1	
R7401	D0YBR0000002	CHIP RESISTOR	1	
R7402	D0GB103JA002	1/10W 10K	1	
R7403	D0GB153JA002	1/10W 15K	1	
R7404	D0GB223JA002	1/10W 22K	1	
R7405	D0GB471JA002	1/10W 470	1	
R7406	D0GB474JA002	1/10W 470K	1	
R7407	D0GB103JA002	1/10W 10K	1	
R7408	D0GB153JA002	1/10W 15K	1	
R7410	D0GB821JA002	1/10W 820	1	
R7421,22	D0GB101JA002	1/10W 100	2	
R7438-42	D0GB220JA002	1/10W 22	5	
R7443	D0GB101JA002	1/10W 100	1	(EG)
R7444	ERJ3RED300V	1/16W 30	1	
R7445	ERJ3RBD682V	1/16W 6.8K	1	
R7446	ERJ3RBD202V	1/16W 2K	1	
R7501	D0GB102JA002	1/10W 1K	1	
R7502	D0GB392JA002	1/10W 3.9K	1	
R7503	D0GB104JA002	1/10W 100K	1	
R7504	D0GB102JA002	1/10W 1K	1	
R7505	D1BB1502A010	RESISTOR	1	
R7506	D0GB104JA002	1/10W 100K	1	
R7507	D1BB15010002	RESISTOR	1	
R7508	D1BB5601A010	RESISTOR	1	
R7510	D0YBR0000002	CHIP RESISTOR	1	
R7515	D0GB472JA002	1/10W 4.7K	1	(EG)
R7518	ERJ3RBD273V	1/16W 27K	1	
R7527-29	D0GB101JA002	1/10W 100	3	
R7531	D0GB104JA002	1/10W 100K	1	
R7532	D0GB332JA002	1/10W 3.3K	1	
R7533	D0YBR0000002	CHIP RESISTOR	1	
R7534	D0GB103JA002	1/10W 10K	1	
R7535-37	D0GB101JA002	1/10W 100	3	
R7543,44	D0GB101JA002	1/10W 100	2	
R7548,49	D0GB472JA002	1/10W 4.7K	2	
R7550	D0GB223JA002	1/10W 22K	1	
R7551-53	D0GB101JA002	1/10W 100	3	
R7557	D0GB511JA002	1/10W 510	1	
R7558,59	D0GB202JA002	1/10W 2K	2	
R7560	D0GB472JA002	1/10W 4.7K	1	
R7561-66	D0GB101JA002	1/10W 100	6	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7567	D0GB101JA002	1/10W 100	1	(EB,EG)
R7568	D0GB101JA002	1/10W 100	1	
R7570	D0GB392JA002	1/10W 3.9K	1	
R7571	D0GB101JA002	1/10W 100	1	
R7574	D0GB223JA002	1/10W 22K	1	
R7575	D0GB101JA002	1/10W 100	1	
R7576	D0GB102JA002	1/10W 1K	1	
R7577,78	D0GB103JA002	1/10W 10K	2	
R7579	D0GB223JA002	1/10W 22K	1	
R7582	D0GB104JA002	1/10W 100K	1	
R7583	D0GB472JA002	1/10W 4.7K	1	
R7584	D0GB473JA002	1/10W 47K	1	
R7585	D0GB225JA002	1/10W 2200K	1	
R7586	D0GB273JA002	1/10W 27K	1	
R7587	D0GB224JA002	1/10W 220K	1	
R7588	D0GB104JA002	1/10W 100K	1	
R7589	D0GB221JA002	1/10W 220	1	
R7590	D0GB104JA002	1/10W 100K	1	
R7597-99	D0GB822JA002	1/10W 8.2K	3	
R7600	D0GB103JA002	1/10W 10K	1	
R7601	D0GB102JA002	1/10W 1K	1	
R7606	D1BB3902A010	RESISTOR	1	
R7607	D0GB101JA002	1/10W 100	1	
R7608	D1BB4302A010	RESISTOR	1	
R7612	D0GB332JA002	1/10W 3.3K	1	
R7614	D0GB470JA002	1/10W 47	1	
R7615,16	D0GB473JA002	1/10W 47K	2	
R7617	ERDS2TJ331T	1/4W 330	1	
R7619	D0GB103JA002	1/10W 10K	1	
R7620	D0GB473JA002	1/10W 47K	1	
R7621	D0GB104JA002	1/10W 100K	1	
R7622	D0GB153JA002	1/10W 15K	1	
R7623	D0GB181JA002	1/10W 180	1	
R7624,25	D0GB103JA002	1/10W 10K	2	
R7626	D0GB821JA002	1/10W 820	1	
R7627	D0GB303JA002	1/10W 30K	1	
R7628	D0GB223JA002	1/10W 22K	1	
R7629-31	D0GB682JA002	1/10W 6.8K	3	
R7639,40	D0GB272JA002	1/10W 2.7K	2	
R7641	D0GB473JA002	1/10W 47K	1	
R7642,43	D0GB562JA002	1/10W 5.6K	2	
R7644	D0GB222JA002	1/10W 2.2K	1	
R7648	ERDS2TJ330T	1/4W 33	1	
R7649	D0GB101JA002	1/10W 100	1	
R7651	D0GB472JA002	1/10W 4.7K	1	
R7652,53	D0GB101JA002	1/10W 100	2	
R7654	D0GB101JA002	1/10W 100	1	(EB)
R7655	D0GB101JA002	1/10W 100	1	
S7501	K0F111B00044	SWITCH,EXT LINK	1	
S7502	K0F111B00044	SWITCH,CH DOWN	1	
S7503	K0F111B00044	SWITCH,CH UP	1	
S7504	K0F111B00044	SWITCH,OPEN/CLOSE	1	
S7505	K0F111B00044	SWITCH,DRIVE SELECT	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
S7506	K0F111B00044	SWITCH,STOP	1	
S7507	K0F111B00044	SWITCH,PLAY	1	
S7508	K0F111B00044	SWITCH,REC	1	
T7501	G4D1C0000003	TRANSFORMER	1	⚠
W701	D0YBR0000002	CHIP RESISTOR	1	
W702-05	D0YDR0000006	CHIP RESISTOR	4	
W706-09	D0YBR0000002	CHIP RESISTOR	4	
W711-28	D0YBR0000002	CHIP RESISTOR	18	
W729	D0YDR0000006	CHIP RESISTOR	1	
W730,31	D0YBR0000002	CHIP RESISTOR	2	
X7501	H0D100500018	CRYSTAL OSCILLATOR	1	
X7502	H0A327200108	CRYSTAL OSCILLATOR	1	
■	04	VEP07A51A	1	NICAM DECORDER P.C.B.
C7301	F1H1C104A008	16V 0.1U	1	
C7302	D0YBR0000002	CHIP RESISTOR	1	
C7303	ECEA0JKA101B	6.3V 100U	1	
C7305	ECEA0JKA101B	6.3V 100U	1	
C7306	F1H1H1030007	50V 0.01U	1	
C7307,08	ECJ1VC1H100D	50V 10P	2	
C7309-11	F1H1H1010005	50V 100P	3	
C7312,13	ECEA1CKA100B	16V 10U	2	
C7314	F1H1C104A008	16V 0.1U	1	
C7317	ECEA1CKA470B	16V 47U	1	
C7318	ECEA1CKA100B	16V 10U	1	
C7323	ECJ1VC1H102J	50V 1000P	1	
C7324	F1H1C104A008	16V 0.1U	1	
C7329	D0YBR0000002	CHIP RESISTOR	1	
C7330	D0GB822JA002	1/10W 8.2K	1	
C7332	F1H1C104A008	16V 0.1U	1	
C7333	F1H1C104A042	16V 0.1U	1	
C7334	ECEA1HKA2R2B	50V 2.2U	1	
C7335	F1H1C104A008	16V 0.1U	1	
IC7301	C1AB00002225	IC	1	
IC7302	C0EAH0000051	IC	1	
K7301-03	D0YBR0000002	CHIP RESISTOR	3	
K7305	D0YBR0000002	CHIP RESISTOR	1	
L7303	G0C1R0JA0019	COIL 1UH	1	
LB7301,02	J0JCC0000124	COIL	2	
LB7303	J0JCC0000080	COIL	1	
PK7301	K1MM07B00002	CONNECTOR(7P)	1	
PK7302	K1MM06B00002	CONNECTOR(6P)	1	
R7301	D0YBR0000002	CHIP RESISTOR	1	
R7304	D0GB101JA002	1/10W 100	1	

R7304	D0GB1013A002	1/10W 10Ω	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7307	D0YBR0000002	CHIP RESISTOR	1	
R7309	D0GB103JA002	1/10W 10K	1	
R7311	D0GB221JA002	1/10W 220	1	
R7312,13	D1BB2200A010	RESISTOR	2	
R7314,15	D0YBR0000002	CHIP RESISTOR	2	
R7317	D0YBR0000002	CHIP RESISTOR	1	
R7319	D0YBR0000002	CHIP RESISTOR	1	
R7322	D0YBR0000002	CHIP RESISTOR	1	
R7324,25	D0GB101JA002	1/10W 100	2	
W6,W7	D0YBR0000002	CHIP RESISTOR	2	
X7301	H0D245500016	CRYSTAL OSCILLATOR	1	
■	05	VEP07A77A/B/C	1	TUNER P.C.B
C7801	F1H1H1030006	50V 0.01U	1	(EB)
C7802	F2A0J470A599	6.3V 47U	1	(EB)
C7809	F1H1H1030006	50V 0.01U	1	
C7813	F2A0J470A599	6.3V 47U	1	
C7814	F2A1H2200032	50V 22U	1	
C7817	F2A0J470A599	6.3V 47U	1	
C7818,19	F1H1H330A736	50V 33P	2	
C7820	F1H1C104A042	16V 0.1U	1	
C7821,22	F1H1H1030006	50V 0.01U	2	
C7824	F2A0J470A599	6.3V 47U	1	
C7825	F1H1H1010005	50V 100P	1	(EP)
C7828	F1H1H1030006	50V 0.01U	1	
C7838	F2A1E4700048	25V 47U	1	(EG)
D7802	MAZ4300NMF	DIODE	1	
K7807	D0YBR0000002	CHIP RESISTOR	1	(EB)
K7808	D0YBR0000002	CHIP RESISTOR	1	(EG,EP)
K7809	D0YBR0000002	CHIP RESISTOR	1	(EB,EG)
K7810	D0YBR0000002	CHIP RESISTOR	1	(EG,EP)
K7811	D0YBR0000002	CHIP RESISTOR	1	(EB)
L7802	G0C270JA0019	COIL 27UH	1	(EB)
LB7801	J0JHC0000032	COIL	1	(EB)
LB7802-04	J0JHC0000032	COIL	3	
LB7805	J0JHC0000032	COIL	1	(EB)
PS7801	K1KB18B00012	CONNECTOR(18P)	1	
Q7802	2SB1218ARL	TRANSISTOR	1	(EP)
QR7806	UNR211500L	TRANSISTOR	1	(EB)
QR7807	B1GBCFJA0002	TRANSISTOR	1	(EB)
R7809	D0GB271JA002	1/10W 270	1	(EB)
R7810	D0GB100JA002	1/10W 10	1	(EB)
R7811	ERG2SJ471E	2W 470	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7812	ERJ6GEYJ681V	1/8W 680	1	(EP)
R7813,14	D0GB271JA002	1/10W 270	2	(EB)
R7815,16	D0GB471JA002	1/10W 470	2	
R7817	ERG2SJ471E	2W 470	1	
R7818	D0GB221JA002	1/10W 220	1	(EP)
R7820	D0GB102JA002	1/10W 1K	1	(EP)
R7823	D0GB562JA002	1/10W 5.6K	1	(EB)
R7844	ERJ6GEYJ681V	1/8W 680	1	(EP)
R7845	D0YBR0000002	CHIP RESISTOR	1	(EG)
R7846	D0GB562JA002	1/10W 5.6K	1	(EG)
TU7801	ENG57D02G1F	TUNER	1	(EB)
TU7801	ENGF7501GF	TUNER	1	(EG)
TU7801	ENGF7502GF	TUNER	1	(EP)
W501	D0YBR0000002	CHIP RESISTOR	1	
W502	D0YDR0000006	CHIP RESISTOR	1	
W503,04	D0YBR0000002	CHIP RESISTOR	2	
W505	D0YDR0000006	CHIP RESISTOR	1	
W506,07	D0YBR0000002	CHIP RESISTOR	2	
W508	D0YDR0000006	CHIP RESISTOR	1	
W509,10	D0YBR0000002	CHIP RESISTOR	2	
W511-15	D0YDR0000006	CHIP RESISTOR	5	
W516,17	D0YBR0000002	CHIP RESISTOR	2	
W518	D0YDR0000006	CHIP RESISTOR	1	
W519-21	D0YBR0000002	CHIP RESISTOR	3	
W522	D0YDR0000006	CHIP RESISTOR	1	
W523	D0YBR0000002	CHIP RESISTOR	1	
W524-28	D0YDR0000006	CHIP RESISTOR	5	
W529	D0YBR0000002	CHIP RESISTOR	1	
W530	D0YDR0000006	CHIP RESISTOR	1	
W531-35	D0YBR0000002	CHIP RESISTOR	5	
W536	ERJ8GEY0R00V	1/4W 0	1	
W537	D0YBR0000002	CHIP RESISTOR	1	
W538,39	D0YDR0000006	CHIP RESISTOR	2	
W540,41	D0YBR0000002	CHIP RESISTOR	2	
W542-46	D0YDR0000006	CHIP RESISTOR	5	
W547-49	D0YBR0000002	CHIP RESISTOR	3	
W550	ERJ8GEY0R00V	1/4W 0	1	
■	06	VEP01961A	1	POWER SUPPLY P.C.B.
C1120	ECQU2A223MLC	0.022U	1	⚠
C1121	ECQU2A683MLC	0.068U	1	⚠
C1122,23	F1B2G1020002	400V 1000P	2	
C1125	F1B2G1020002	400V 1000P	1	
C1143	ECEC2GG680FZ	400V 68U	1	
C1150	EEUFM1V680B	35V 68U	1	
C1151	F1B3D102A011	2V 1000P	1	
C1152	ECJ2VC1H331J	50V 330P	1	
C1153	ECJ2VB1H222K	50V 2200P	1	
C1154	ECJ2VB1H102K	50V 1000P	1	
C1200	F1J1E104A081	25V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1201	ECJ2VB1E473K	25V 0.047U	1	
C1270,71	F2A1C182A621	16V 1800U	2	
C1272	F2A1C102A625	16V 1000U	1	
C1273	EEUFM1C121B	16V 120U	1	
C1274	F1J1E104A081	25V 0.1U	1	
C1400	EEUFM1E221B	25V 220U	1	
C1401	F1J1C1050030	16V 1U	1	
C1402	ECJ2VB1E103K	25V 0.01U	1	
C1403	ECJ2VC1H391J	50V 390P	1	
C1404	ECJ2VB1H472K	50V 4700P	1	
C1405	ECJ2VB1H102K	50V 1000P	1	
C1406	F2A0J681A550	6.3V 680U	1	
C1407	EEUFM1E221B	25V 220U	1	
C1408,09	F1J1E104A081	25V 0.1U	2	
C1410	F1J1H2230005	50V 0.022U	1	
C1411	ECJ2VC1H181J	50V 180P	1	
C1412	ECJ2VB1E103K	25V 0.01U	1	
C1413	F2A1A4710038	10V 470U	1	
C1421	F1J1E104A081	25V 0.1U	1	
C1513	F2A1A4710038	10V 470U	1	
C1514	ECJ2VB1E103K	25V 0.01U	1	
C1601	EEUFM1E221B	25V 220U	1	
C1602-04	F1J1E104A081	25V 0.1U	3	
C1605	ECJ2VC1H181J	50V 180P	1	
C1606	ECJ2VB1E103K	25V 0.01U	1	
C1607	F2A1A681A539	10V 680U	1	
C1608	F1J1E104A081	25V 0.1U	1	
C1701	EEUFM1E221B	25V 220U	1	
C1702,03	F1H1C104A042	16V 0.1U	2	
C1704	F1H1H1030006	50V 0.01U	1	
C1705	ECJ1VC1H121J	50V 120P	1	
C1706	F1H1H1030006	50V 0.01U	1	
C1707	F2A0J681A550	6.3V 680U	1	
C1800	F2A1E4700048	25V 47U	1	
D1140	B0EDKT000009	DIODE	1	
D1151	B0HAGM000006	DIODE	1	
D1152	MAZ4100NMF	DIODE	1	
D1155	MAZ73000BC	DIODE	1	
D1156	MA2C165001VT	DIODE	1	
D1157	B0HADV000001	DIODE	1	
D1270	B0JBSG000010	DIODE	1	
D1400	B0JCPE000015	DIODE	1	
D1401	B0JCPD000021	DIODE	1	
D1601	B0JCPD000021	DIODE	1	
D1701	B0JCPE000015	DIODE	1	
D1800	MA2J11100L	DIODE	1	
F1101	K5D202BK0005	FUSE	1	⚠
IC1150	C0DACZH00017	IC	1	
IC1200	C0DAEMB00003	IC	1	
IC1400	C0DAAJG00007	IC	1	
IC1401	C0DBAKG00005	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC1501	C0EBJ0000143	IC	1	
IC1601	C0DBAKG00007	IC	1	
IC1701	C0DBAKG00005	IC	1	
IP1401	K5H3022A0013	IC PROTECTOR	1	⚠
IP1601	K5H3022A0013	IC PROTECTOR	1	⚠
L1120,21	G0B233D00001	COIL	2	
L1270	G0A100H00025	COIL 10UH	1	
L1400	G0A100HA0023	COIL 10UH	1	
L1401	G0A330ZA0041	COIL 33UH	1	
L1402	G0A150ZA0041	COIL 15UH	1	
L1503	G0A100HA0023	COIL 10UH	1	
L1601	G0A150ZA0041	COIL 15UH	1	
L1701	G0A220ZA0041	COIL 22UH	1	
LB1400	J0JHC0000048	FILTER	1	
LB1600	J0JHC0000048	FILTER	1	
LB1700	J0JHC0000048	FILTER	1	
P1101	K2AA2H000007	AC INLET	1	⚠
P1102	K1KB23A00004	CONNECTOR(23P)	1	
P1103	K1KA04AA0180	CONNECTOR(4P)	1	
Q1200	B3PBA0000237	TRANSISTOR	1	
Q1270	B1DHED000008	TRANSISTOR	1	
Q1400	B1DHDD000022	TRANSISTOR	1	
Q1600	B1DHDD000022	TRANSISTOR	1	
Q1700	B1DDCC000009	TRANSISTOR	1	
QR1301-04	UNR221300L	TRANSISTOR	4	
QR1800	UNR211300L	TRANSISTOR	1	
QR1801	UNR221300L	TRANSISTOR	1	
R1150	ERJ6GEYJ180V	1/8W 18	1	
R1151	ERJ6GEYJ682V	1/8W 6.8K	1	
R1152	ERJ6GEYJ103V	1/8W 10K	1	
R1153	ERJ6GEYJ180V	1/8W 18	1	
R1154	ERJ6GEYG912V	1/8W 9.1K	1	
R1155	ERJ6GEYG471V	1/8W 470	1	
R1156	ERJ6GEYG163V	1/8W 16K	1	
R1157	ERJ6GEYG511V	1/8W 510	1	
R1158	ERX2SJR22E	22	1	
R1200	ERJ6GEYG122V	1/8W 1.2K	1	
R1201	ERJ6GEYG822V	1/8W 8.2K	1	
R1205	ERJ6GEYJ224V	1/8W 220K	1	
R1206	ERJ6GEYG242V	1/8W 2.4K	1	
R1207	ERJ6GEYJ103V	1/8W 10K	1	
R1208	ERJ6GEYJ222V	1/8W 2.2K	1	
R1209,10	ERJ6GEYJ102V	1/8W 1K	2	
R1270,71	ERJ6GEYJ472V	1/8W 4.7K	2	
R1311	ERJ6GEYJ472V	1/8W 4.7K	1	
R1401	ERJ6GEYJ104V	1/8W 100K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1402	ERJ6RBD821V	1/10W 820	1	
R1404	ERJ6RBD102V	1/10W 1K	1	
R1405	ERJ6GEYJ513V	1/8W 51K	1	
R1406	D1BFR0270001	27	1	
R1407	ERJ6RBD272V	1/10W 2.7K	1	
R1409	ERJ6RBD472V	1/10W 4.7K	1	
R1410	ERJ6RBD151V	1/10W 150	1	
R1411	ERJ6RBD123V	1/10W 12K	1	
R1518	ERJ6GEYJ103V	1/8W 10K	1	
R1601	D1BFR0150001	15	1	
R1602	ERJ6GEYJ513V	1/8W 51K	1	
R1603	ERJ6RBD242V	1/10W 2.4K	1	
R1604	ERJ6RBD153V	1/10W 15K	1	
R1605	ERJ6RBD272V	1/10W 2.7K	1	
R1701	D1BFR047A010	47	1	
R1702	D0GB333JA002	1/10W 33K	1	
R1703	D0YBR0000002	CHIP RESISTOR	1	
R1704	ERJ3RBD103V	1/16W 10K	1	
R1705	ERJ3RBD472V	1/16W 4.7K	1	
R1800	ERJ6GEYJ471V	1/8W 470	1	
R1801	ERJ6GEYJ104V	1/8W 100K	1	
R1802	ERJ6GEYJ472V	1/8W 4.7K	1	
R1803	ERJ6GEYJ103V	1/8W 10K	1	
T1150	ETS29AZ2G6AC	TRANSFORMER	1	⚠
VA1110	ERZVA5V471	SURGE ABSORBER	1	⚠
ZA1103,04	EYF52BCY	FUSE HOLDER	2	
■	07	VEP70115A	1	FRONT(L)P.C.B.
P7001	K1KA03AA0301	CONNECTOR(3P)	1	
S7001	EVQPC105K	SWITCH,POWER	1	
■	08	VEP70116B	1	LED P.C.B.
C7101	F1H1H1030006	50V 0.01U	1	
D7101	B3ABA0000595	DIODE	1	
D7102	B3ACA0000265	DIODE	1	
D7107	B3AEA0000049	DIODE	1	
P7101	K1KB06B00024	CONNECTOR(6P)	1	
Q7101-03	2SD0601ARN	TRANSISTOR	3	
R7101	D0GB103JA002	1/10W 10K	1	
R7103,04	ERJ6GEYJ201V	1/8W 200	2	
R7105	ERJ6GEYJ111V	1/8W 110	1	
R7108	D0GB473JA002	1/10W 47K	1	
R7110	D0GB473JA002	1/10W 47K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R7112	D0GB473JA002	1/10W 47K	1	
■	09	VEP73121C/D	1	SD CARD P.C.B.
C6801	F1H1H1030006	50V 0.01U	1	
C6802,03	F1J0J106A014	6.3V 10U	2	
FL6801	F1H0J1050025	FILTER	1	
LB6801	J0JHC0000032	COIL	1	
LB6802	J0JHC0000045	COIL	1	
P6802	K1KB14A00073	CONNECTOR(14P)	1	
P6803	K1NA09E00027	CONNECTOR(9P)	1	
R6801	D0GB101JA002	1/10W 100	1	
R6802,03	D0GB220JA002	1/10W 22	2	
R6804	D0GB223JA002	1/10W 22K	1	
R6805	D0GB123JA002	1/10W 12K	1	
R6807	D0GB223JA002	1/10W 22K	1	
RX6801	D1H82204A024	RESISTOR-RESISTOR	1	
RX6802	D1H81234A024	RESISTOR-RESISTOR	1	

22. Schematic Diagram for priting with A4 size

MAIN P.C.B.

IR7501
REMOTE CONTROL RECEIVER
VDD GND CTL.

IC7501
(TIMER)

IC7506
(RESET)

IC7505
(RESET)

D+3.3V

X SW+5.2V

QR7506
(H:ON)

S7504
OPEN/CLOSE

S7506
STOP

S7508
REC

S7502
CH-DOWN

S7501
EXT LINK

S7505
SELECT

S7507
PLAY

S7503
CH-UP

S7001
POWER

P7001 P7506
3

FRONT(L) P.C.B.

IR
REMOTE CTL.
SYS PFAIL H
PFAIL L
KEY IN1
KEY IN2
KEY IN3

POWER SAVE H 78
P SAVE H
QR7508 (H:ON)
Q7510 (L:OFF)
X SW+12.4V
IP7501 (IC PROTECTOR)

T7501
DISPLAY HEATER POWER SWITCHING TRANSFORMER
HEATER+
+B
GND
HEATER-
+38V
-33V
D7506
D7505
UNREG.+38V
PP7401 PS7801 3
TO U/V TUNER (16 BTL+30V)

PWR SAVE H QR7401- B
TO POWER SUPPLY SECTION

DP7501
F+
F-
TIMER DISPLAY
P1
P32
1G
2G
3G
8G

IC7502
(RESET)
RESET L 11
VDD 5
X SW+5.2V

IC7504
(DISPLAY DRIVE)
FL TXD 4
FL RXD 5
FL CLK 6
FL RESET L 93
FL CS 94
VCC1 8
VCC2 18
S DATA 4
SCK 3
RESET 1
CS 2
VSS 5
VP 64
SEG00 44
SEG25 19
SEG26 17
SEG35 45
SEG39 49
DIG00 53
DIG07 56

IIC CLK 28
IIC DATA 29
XCIN 9
XCOUT 10
X7502 32.768KHz
XOUT 12
X7501 10MHz
XIN 14

IC7503
(EEPROM)
SCL 6
SDA 5

IC3001
(A/V PROCESSOR)
SCL 88
SDA 89

<EEP ROM information>
1.Country & Language
2.Tuner preset
3.Timer REC info.
4.ROM Correction info.

IC7301
(NICAM/A2)
PK7702 PK7302 1
PK7702 PK7302 2
SCL 29
SDA 30

TU7801
U/V TUNER
EH50EB
MSDA 3
SDA 12
MSCL 5
SCL 11
PP7401 PS7801 7
PP7401 PS7801 8

EH50EB
RFC A MUTE H 75
RFC A MUTE H PP7401- 15
TO TUNER P.C.B.

XTMUTE 63
XT MUTE QR4002- B
SYNC IN 109
Q7503 BUFFER
SLICER VIDEO IC3001- 85
CVIN1 113
Q7501 BUFFER
TO/FROM ANALOG A/V SECTION

HDD PFAIL L 47
HDD PFAIL L IC1501- 4
DR POWER ON H 49
DR P ON H P1501- 15
DI POWER ON H 51
DIP ON H P1501- 11
JC POWER ON H 50
JC P ON H IC1510- 2
TO/FROM POWER SUPPLY SECTION

TBUS CLK 44
G SCLK A
SCLK P7402- 6
TBUS TXD 42
G SBPTM A
SBPTM P7402- 10
TBUS RXD 43
G SBMTP A
SBMTP P7402- 12
TO/FROM DIGITAL P.C.B.

EH52EG,EH50EG
EPG ON H 45
EPG ON H P7402- 28

IC7507
(FAN MOTOR DRIVE)
FAN PWM OUT 23
X SW+12.4V
Q7511 (FAN MOTOR DRIVE)
FANDCOUT
P7504 1
P7504 3
FAN MOTOR
FAN LOCK H 52

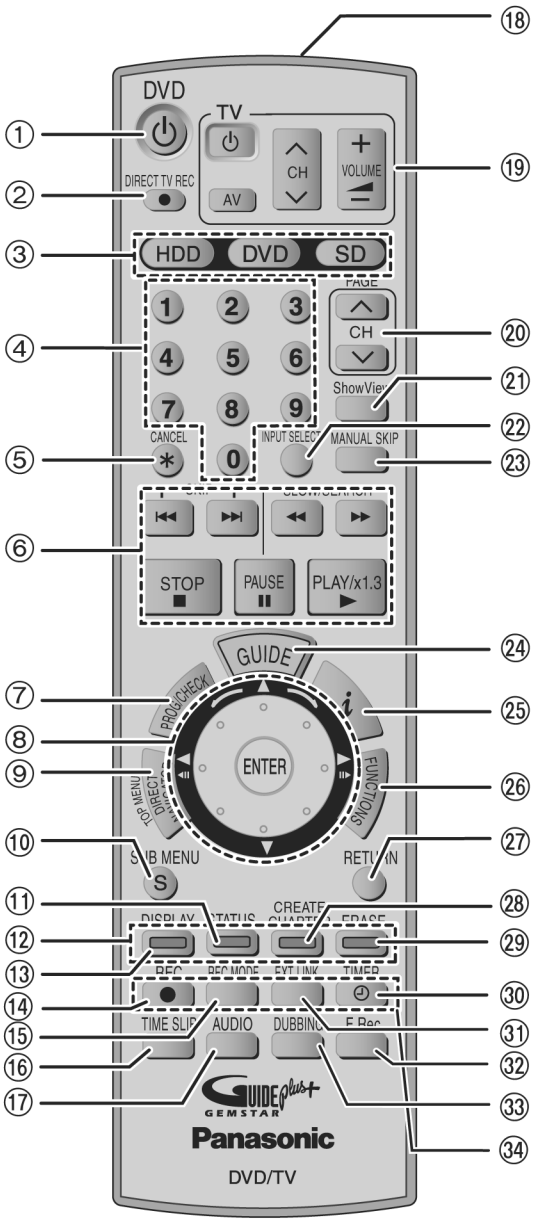
X SW+5.2V
HDD SEL
D7103 (BLUE)
Q7103 (HDD SEL LED DRIVE)
DVD SEL
D7102 (AMBER)
Q7102 (DVD SEL LED DRIVE)
SD SEL
D7101 (GREEN)
Q7101 (SD SEL LED DRIVE)
P7101 P7507 2
P7101 P7507 3
P7101 P7507 4
HDD SEL LED H 86
DVD SEL LED H 87
SD SEL LED H 88

LED P.C.B.

DMR-EH50EB/EG/EP,EH52EG
Timer Block Diagram

Remote control

Instructions for operations are generally described using the remote control.



① Turn the unit on
② Direct TV recording
③ Select drive (HDD, DVD or SD)
④ Select channels and title numbers, etc./Enter numbers
⑤ Cancel
⑥ Basic operations for recording and play
⑦ Show timer recording programme screen
⑧ Smart Wheel (➡ below)
⑨ Show Top menu/Direct Navigator
⑩ Show sub menu
⑪ Show status messages
⑫ Colour buttons for switching between Video/Picture and Video/Playlists, selecting character type when entering text, manual tuning settings and GUIDE Plus+ operations※
⑬ Show on-screen menu
⑭ Start recording
⑮ Change recording mode
⑯ Skip the specified time/Display the television image as a picture-in-picture
⑰ Select audio
⑱ Transmission window
⑲ Television operations
⑳ Channel select/Change pages in the GUIDE Plus+ system※

㉑ Show SHOWVIEW screen
㉒ Input select (AV1, AV2, AV3 or AV4)
㉓ Skip 30 seconds forward
㉔ Show the GUIDE Plus+ screen
㉕ Show programme information in the GUIDE Plus+ system※
㉖ Show FUNCTIONS window
㉗ Return to previous screen
㉘ Create chapter
㉙ Erase items
㉚ Timer recording standby/release
㉛ Linked timer recordings with external equipment
㉜ Flexible Recording
㉝ One touch transfer (dubbing)
㉞ Recording functions

※Refer to the “User’s manual for the GUIDE Plus+ system” for more information.

Note

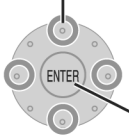
- Buttons such as the [● REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.
- If you press [EXT LINK] accidentally, the unit turns off and switches to recording standby mode. Press [EXT LINK] again to cancel recording standby.
- The word “button” is not used in these operating instructions so “Press the [ENTER] button.” is shown as “Press [ENTER].”
- You can use this remote control to operate your television if you set the television manufacturer code.

■ Smart Wheel operation

- **Select items on menu screens and set items.**

Press [▲, ▼, ◄, ►] (up, down, left or right) to select an item.

You can also turn the wheel to select an item.



Press [ENTER] to confirm.

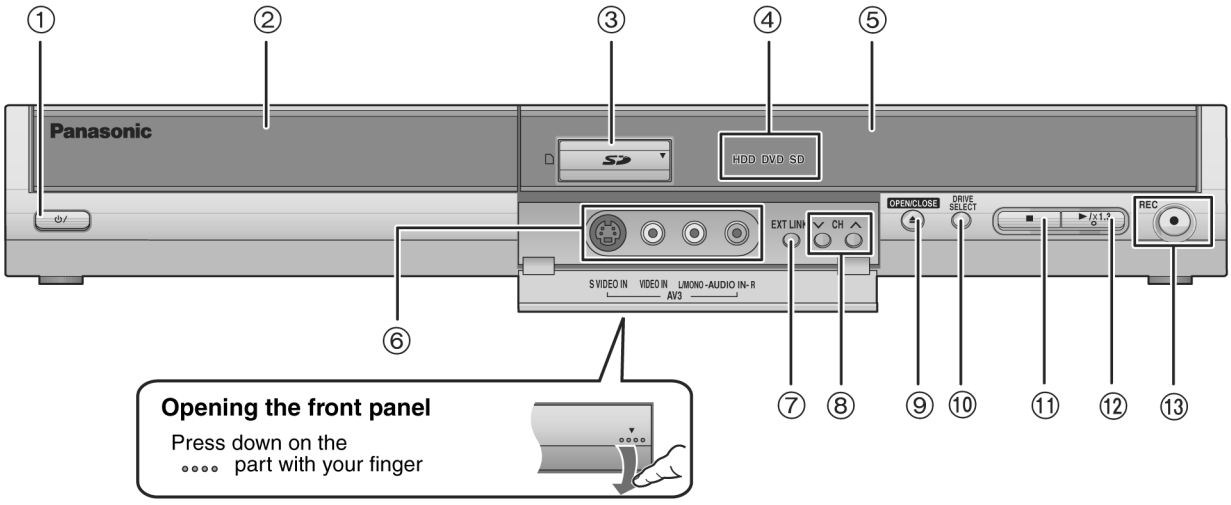
These operations are also possible…..

- **Frame-by-frame (backward/forward/):**
  While paused, press [◄❚❚] or [❚❚►] (left/right)
- **Search (forward/backward):**
  During play, turn right or turn left
- **Slow-motion (forward/:backward):**
  While paused, turn right or turn left

Note

Press the Smart Wheel lightly when turning it.
If you press it strongly when turning it, [▲, ▼, ◄, ►] may be mistakenly activated.

Main unit



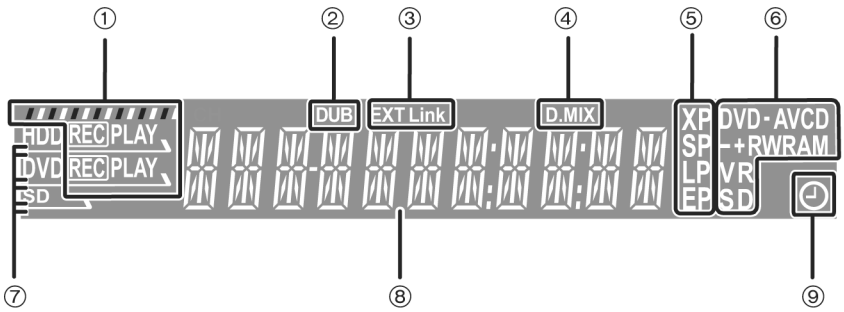
Opening the front panel

Press down on the part with your finger

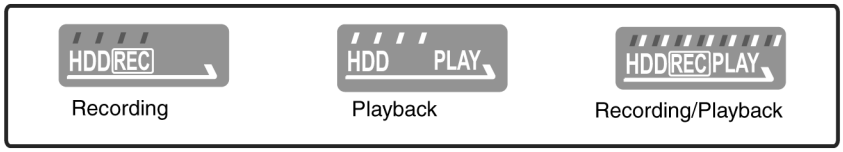
① **Standby/on switch (⏻/I)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② Disc tray
③ SD card slot
④ Lights when the HDD, DVD or SD drive is selected
⑤ Display (➡ below)
⑥ Connection for camcorder etc.
⑦ Linked timer recordings with external equipment
⑧ Channel select
⑨ Open/close disc tray
⑩ Select drive
Drive changes each time you press [DRIVE SELECT].
⑪ Stop
⑫ Start play
⑬ Start recording/Remote control signal sensor
Specify a time to stop recording

Rear panel terminals

The unit's display

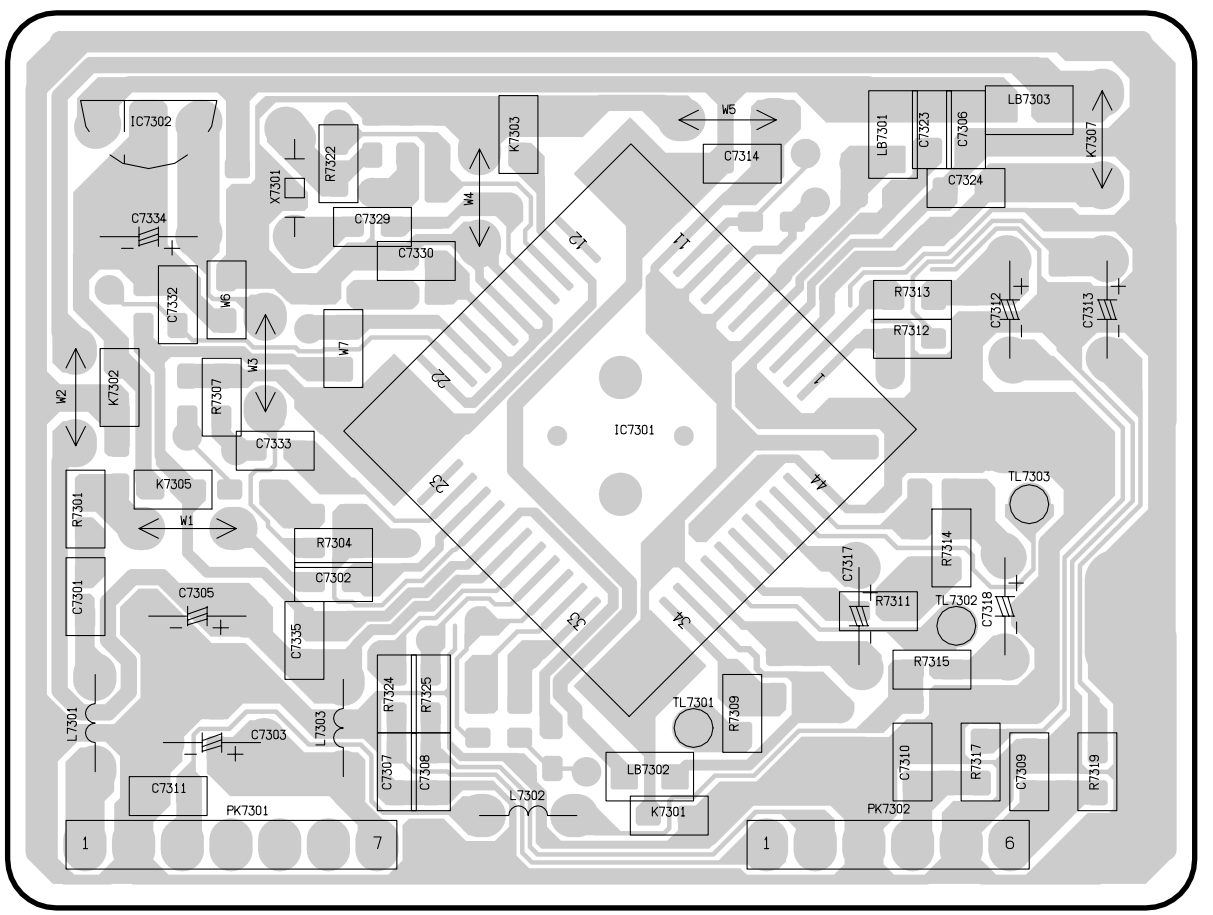


① e.g., HDD



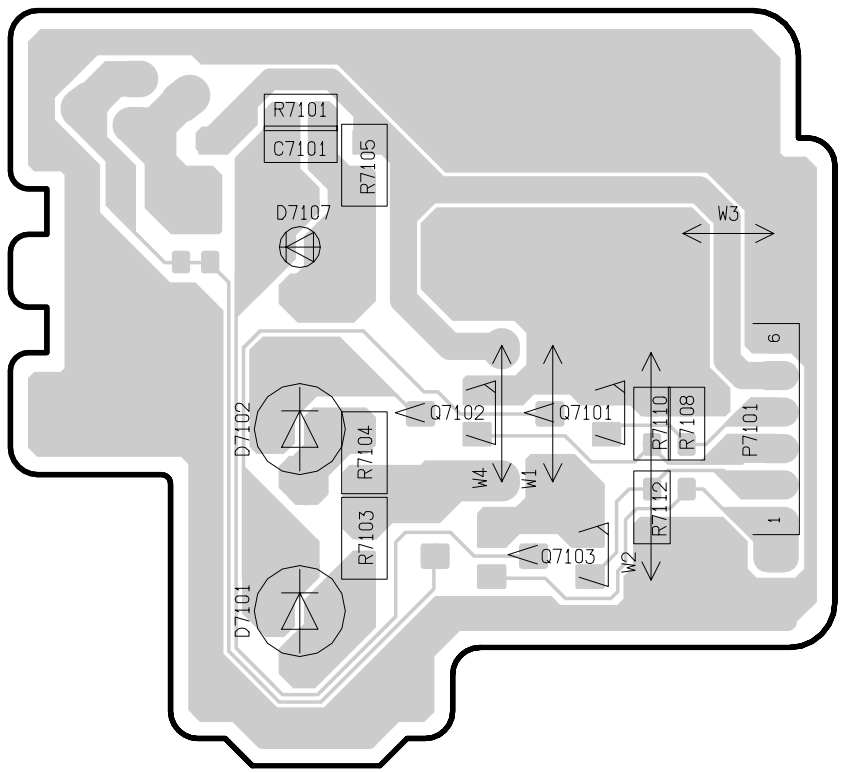
② Transferring (dubbing) indicator
③ Linked timer recordings with external equipment indicator
④ D.MIX (multi-channel DVD-Audio only)
When lit: Down-mixing is possible.
When off: The disc prevents down-mixing so only the two front channels can be played (Regarding DVD-Audio)
⑤ Recording mode
⑥ Disc type
⑦ Lights when the HDD, DVD or SD drive is selected
⑧ Main display section
⑨ Timer recording indicator

Nicam Decoder P.C.B.

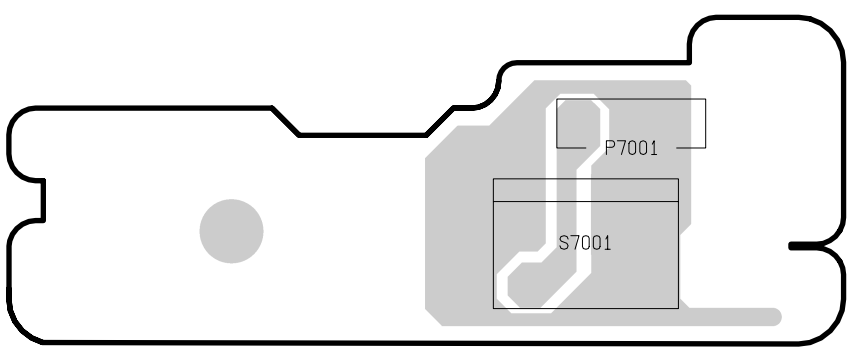


DMR-EH50EB/EG/EP,EH52EG
Nicam Decoder P.C.B. (VEP07A51A)

LED P.C.B.



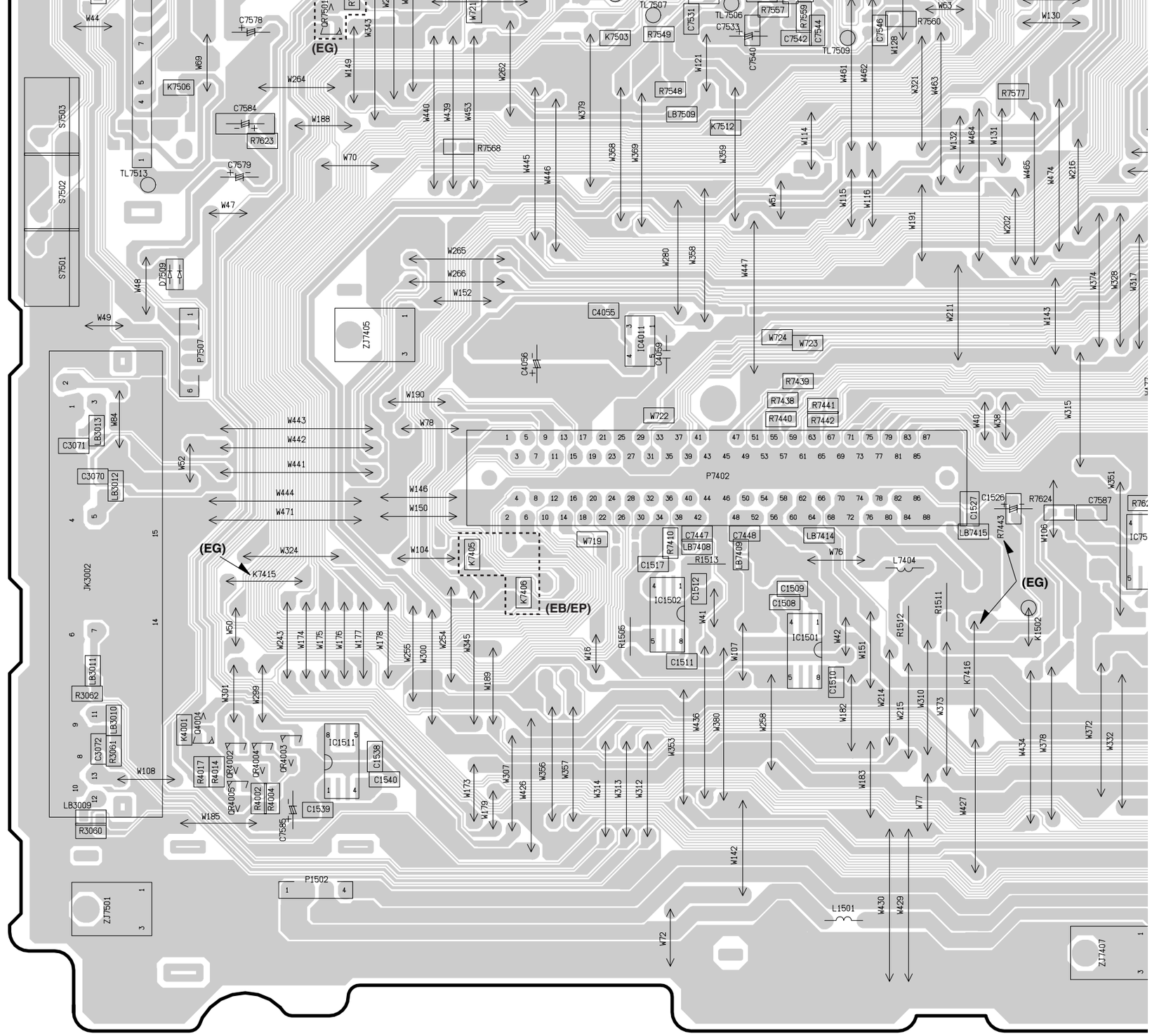
Front (L) P.C.B.



DMR-EH50EB/EG/EP,EH52EG
LED P.C.B. (VEP70116B)
Front (L) P.C.B. (VEP70115A)

F D C B A

1 2 3 4 5


(EG)
(EB/EP)
(EG)
(EG)
P7402
P1502
P7507
ZJ7405
ZJ7501
ZJ7407
JK3002
S7503
S7502
S7501
K7506
K7503
K7512
K7405
K7406
K7415
K7416
K1502
TL7513
TL7507
TL7506
TL7509
LB7509
LB7414
LB7415
LB7408
LB7409
LB3013
LB3012
LB3011
LB3010
LB3009
IC1502
IC1501
IC1511
IC4011
L7404
L1501
W443
W442
W441
W444
W471
W324
W146
W150
W104
W190
W78
W722
W719
W723
W724
W130
W63
W69
W264
W188
W70
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W48
W49
W265
W266
W152
W108
W185
W52
W84
W50
W51
W76
W77
W72
W142
W211
W191
W202
W315
W317
W328
W374
W143
W106
W351
W40
W38
W41
W42
W107
W151
W214
W215
W310
W373
W372
W332
W434
W378
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W258
W380
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W358
W447
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W116
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W321
W463
W464
W131
W132
W465
W474
W216
R7548
R7549
R7568
R7623
R7557
R7589
R7560
R7577
R7624
R7443
R7439
R7438
R7440
R7441
R7442
R7410
R1513
R1505
R1511
R1512
R3062
R3061
R3060
R4017
R4014
R4002
R4004
C7578
C7584
C7579
C7585
C7531
C7533
C7540
C7543
C7544
C7546
C7447
C7448
C7587
C1526
C1527
C1517
C1512
C1509
C1508
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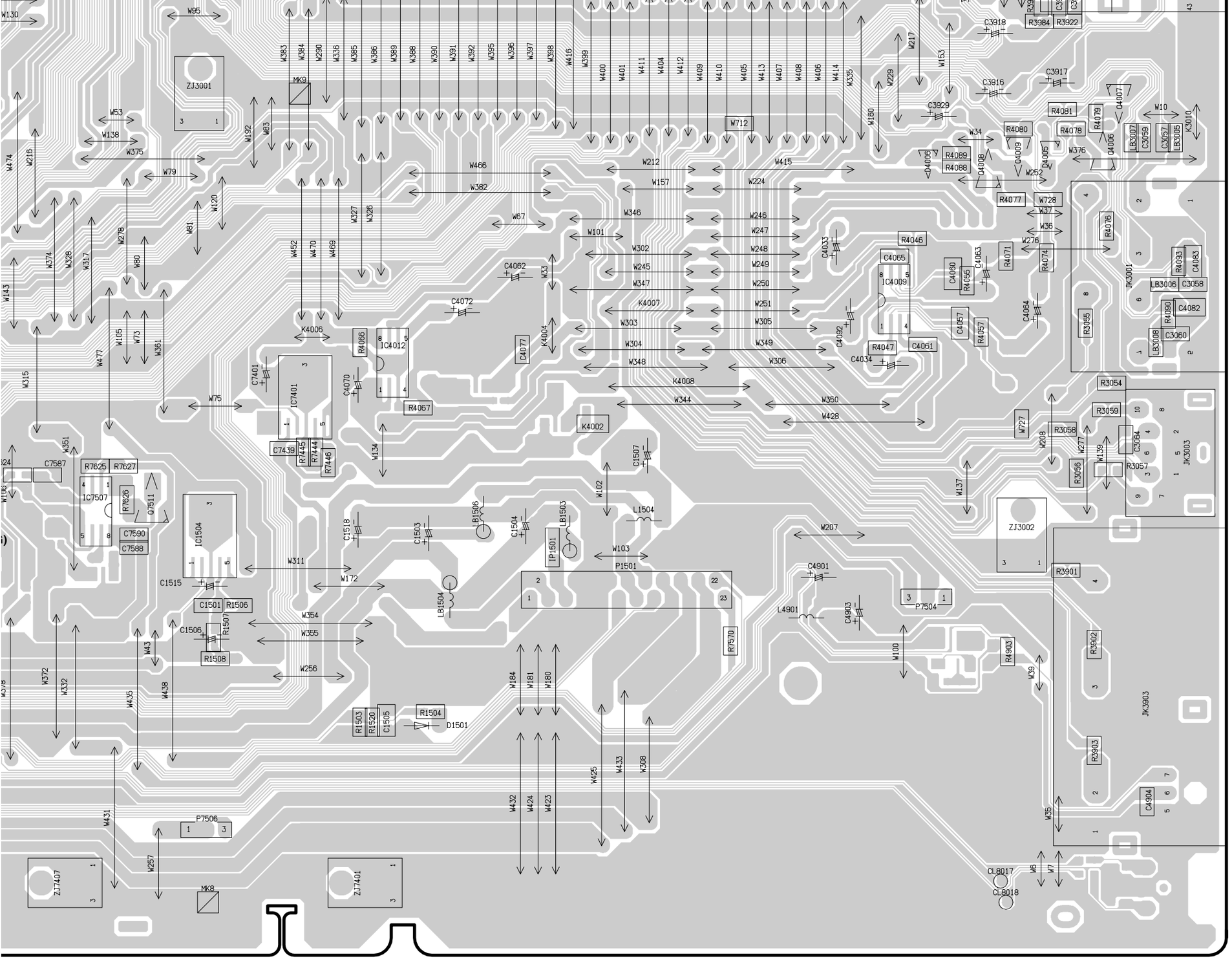
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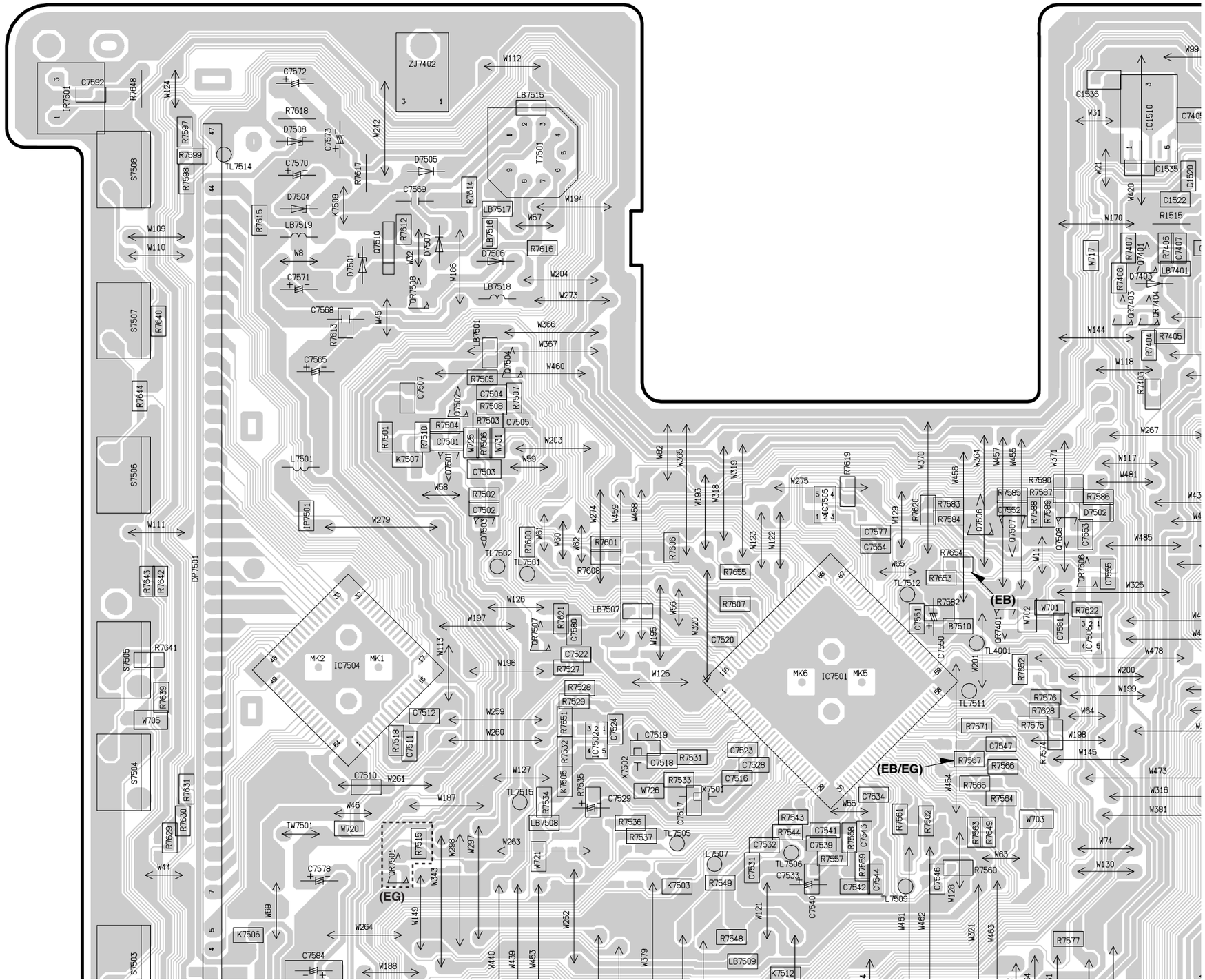
Main P.C.B.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R7629
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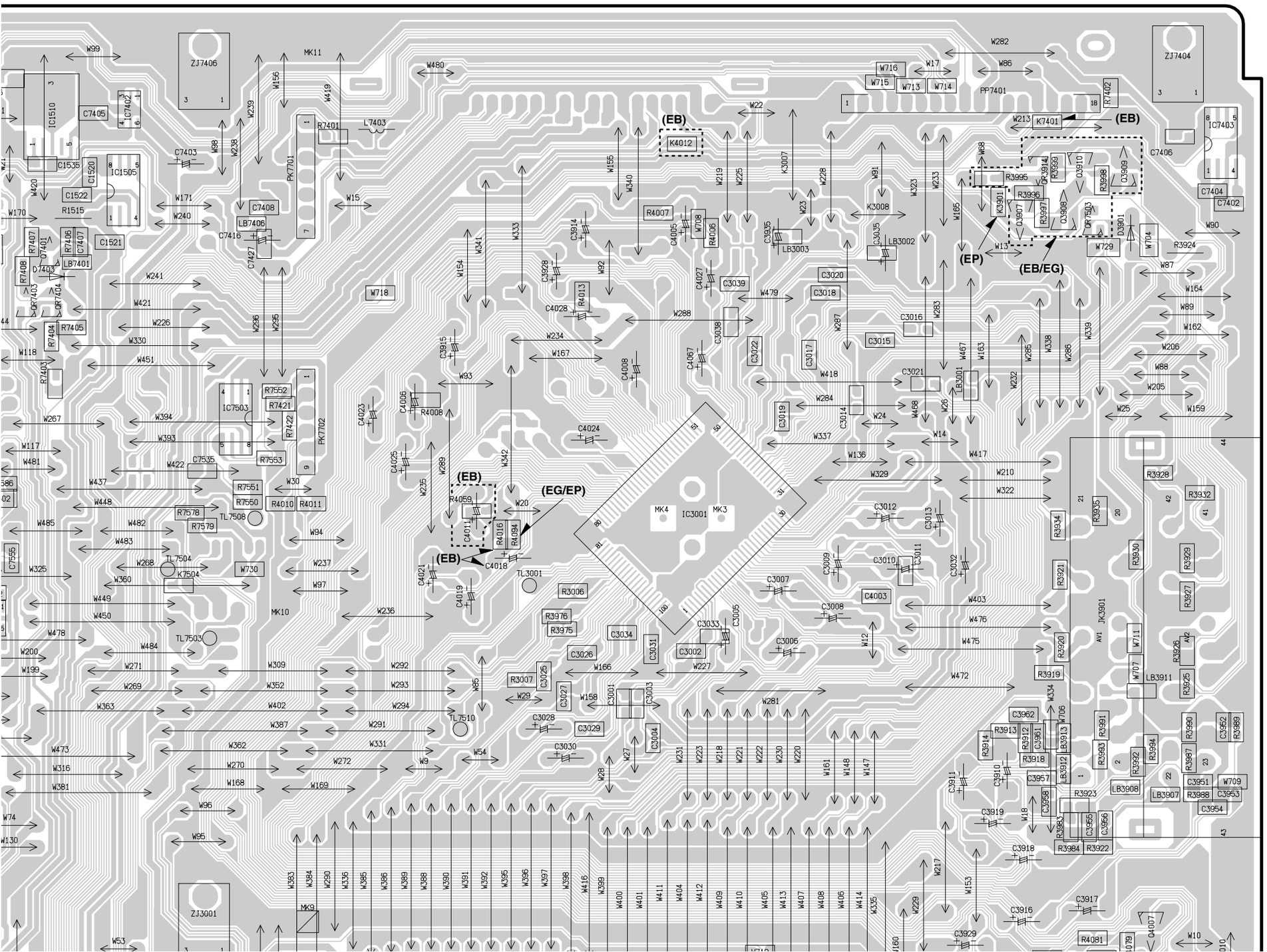

Location Map

DMR-EH50EB/EG/EP,EH52EG
Main P.C.B.
VEP79107J:EH50EB,VEP79107H:EH50EG,EH52EG
VEP79107N:EH50EP
(4/4 Section)

Main P.C.B.

Integrated Circuit

IC1501	B-4
IC1502	B-3
IC1504	B-5
IC1505	F-5
IC1510	F-4
IC1511	B-2
IC3001	E-6
IC4009	C-7
IC4011	C-3
IC4012	C-5
IC7401	B-5
IC7402	F-5
IC7403	F-8
IC7501	D-3
IC7502	D-3
IC7503	E-5
IC7504	D-2
IC7505	E-3
IC7506	D-4
IC7507	B-4

Transistor

Q3907	E-7
Q3908	F-7
Q3909	F-8
Q3910	F-7
Q4004	B-2
Q4006	C-8
Q4007	C-8
Q4008	C-7
Q4009	C-7
Q7401	E-4
Q7501	E-2
Q7502	E-2
Q7503	E-2
Q7504	E-3
Q7506	E-4
Q7507	E-4
Q7508	E-4
Q7510	E-2
Q7511	B-5

Transistor-resistor

QR3914	F-7
QR4002	B-2
QR4003	B-2
QR4004	B-2
QR4005	A-2
QR7401	D-4
QR7403	E-4
QR7404	E-4
QR7501	D-2
QR7503	E-7
QR7506	D-4
QR7507	D-3
QR7508	E-2

Test Point

TL3001	D-6
TL4001	D-4
TL7501	D-3
TL7502	D-2
TL7503	D-5
TL7504	D-5
TL7505	D-3
TL7506	D-3
TL7507	D-3
TL7508	E-5
TL7509	D-4
TL7510	D-6
TL7511	D-4
TL7512	D-4
TL7513	C-2
TL7514	F-2
TL7515	D-3
TW7501	D-2

Connector

JK3001	C-8
JK3002	B-2
JK3003	B-8
JK3901	D-8
JK3903	B-8
P1501	B-6
P1502	A-2
P7402	B-3
P7504	B-7
P7506	A-5
P7507	C-2
PP7401	F-7

Diode

D1501	A-5
D3901	E-8
D4005	C-7
D4006	C-7
D7403	E-4
D7501	E-2
D7502	E-4
D7504	F-2
D7505	F-2
D7506	E-2
D7507	E-2
D7508	F-2
D7509	C-2

IC Protector

IP1501	B-6
IP7501	E-2

Coil

L1501	A-4
L1504	B-6
L4901	B-7
L7403	F-5
L7404	B-4
L7501	E-2
LB1503	B-6
LB1504	B-6
LB1506	B-6
LB3001	E-7
LB3002	E-7
LB3003	E-7
LB3005	C-8
LB3006	C-8
LB3007	C-8
LB3008	C-8
LB3009	A-1
LB3010	B-2
LB3011	B-2
LB3012	B-2
LB3013	B-2
LB3907	D-8
LB3908	D-8
LB3911	D-8
LB3912	D-7
LB3913	D-7
LB7401	E-4
LB7406	E-5
LB7408	B-3
LB7409	B-3
LB7414	B-4
LB7415	B-4
LB7501	E-2
LB7507	D-3
LB7508	D-3
LB7509	C-3
LB7510	D-4
LB7515	F-3
LB7516	E-2
LB7517	F-2
LB7518	E-2
LB7519	E-2

Capacitor

C1501	B-5
C1503	B-6
C1504	B-6
C1505	B-5
C1506	B-5
C1507	B-6
C1508	B-3
C1509	B-3
C1510	B-4
C1511	B-3
C1512	B-3
C1515	B-5
C1517	B-3
C1518	B-5
C1520	F-4
C1521	E-5
C1522	F-4
C1526	B-4
C1527	B-4
C1535	F-4
C1536	F-4
C1538	B-2
C1539	A-2
C1540	A-2
C3001	D-6
C3002	D-6
C3003	D-6
C3004	D-6
C3005	D-6
C3006	D-7
C3007	D-7
C3008	D-7
C3009	D-7
C3010	D-7
C3011	D-7
C3012	E-7
C3013	E-7
C3014	E-7
C3015	E-7
C3016	E-7
C3017	E-7
C3018	E-7
C3019	E-6
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C3031	D-6
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C3064	B-8
C3070	B-2
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C3072	B-2
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C3957	D-7
C3958	D-7
C3961	D-7
C3962	D-7
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C4005	E-6
C4006	E-5
C4008	E-6
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C4018	D-6
C4019	D-6
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C4092	C-7
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C4903	B-7
C4904	A-8
C7401	B-5
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C7403	F-5
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C7571	E-2
C7572	F-2
C7573	F-2
C7577	E-4
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C7579	C-2
C7581	D-4
C7584	C-2
C7585	A-2
C7587	B-4
C7588	B-5
C7590	B-5
C7592	F-1

Resistor

R1503	A-5
R1504	B-5
R1505	B-3
R1506	B-5
R1507	B-5
R1508	B-5
R1511	B-4
R1512	B-4
R1513	B-3
R1515	F-4
R1520	A-5
R3006	D-6
R3007	D-6
R3054	C-8
R3055	C-7
R3056	B-7
R3057	B-8
R3058	B-7
R3059	B-8
R3060	A-1
R3061	B-2
R3062	B-1
R3901	B-7
R3902	B-8
R3903	A-8
R3912	D-7
R3913	D-7
R3914	D-7
R3918	D-7
R3919	D-7
R3920	D-7
R3921	D-7
R3922	D-7
R3923	D-7
R3924	E-8
R3925	D-8
R3926	D-8
R3927	D-8
R3928	E-8
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R3999	F-7
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R4004	A-2
R4006	E-6
R4007	F-6
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R4011	E-5
R4013	E-6
R4014	B-2
R4016	E-6
R4017	B-2
R4046	C-7
R4047	C-7
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R4057	C-7
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R4067	B-5
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R4078	C-7
R4079	C-8
R4080	C-7
R4081	C-7
R4088	C-7
R4089	C-7
R4090	C-8
R4093	C-8
R4094	E-6
R4903	B-7
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R7404	E-4
R7405	E-4
R7406	E-4
R7407	E-4
R7408	E-4
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R7422	E-5
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R7439	C-3
R7440	C-3
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R7443	B-4
R7444	B-5
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R7576	D-4
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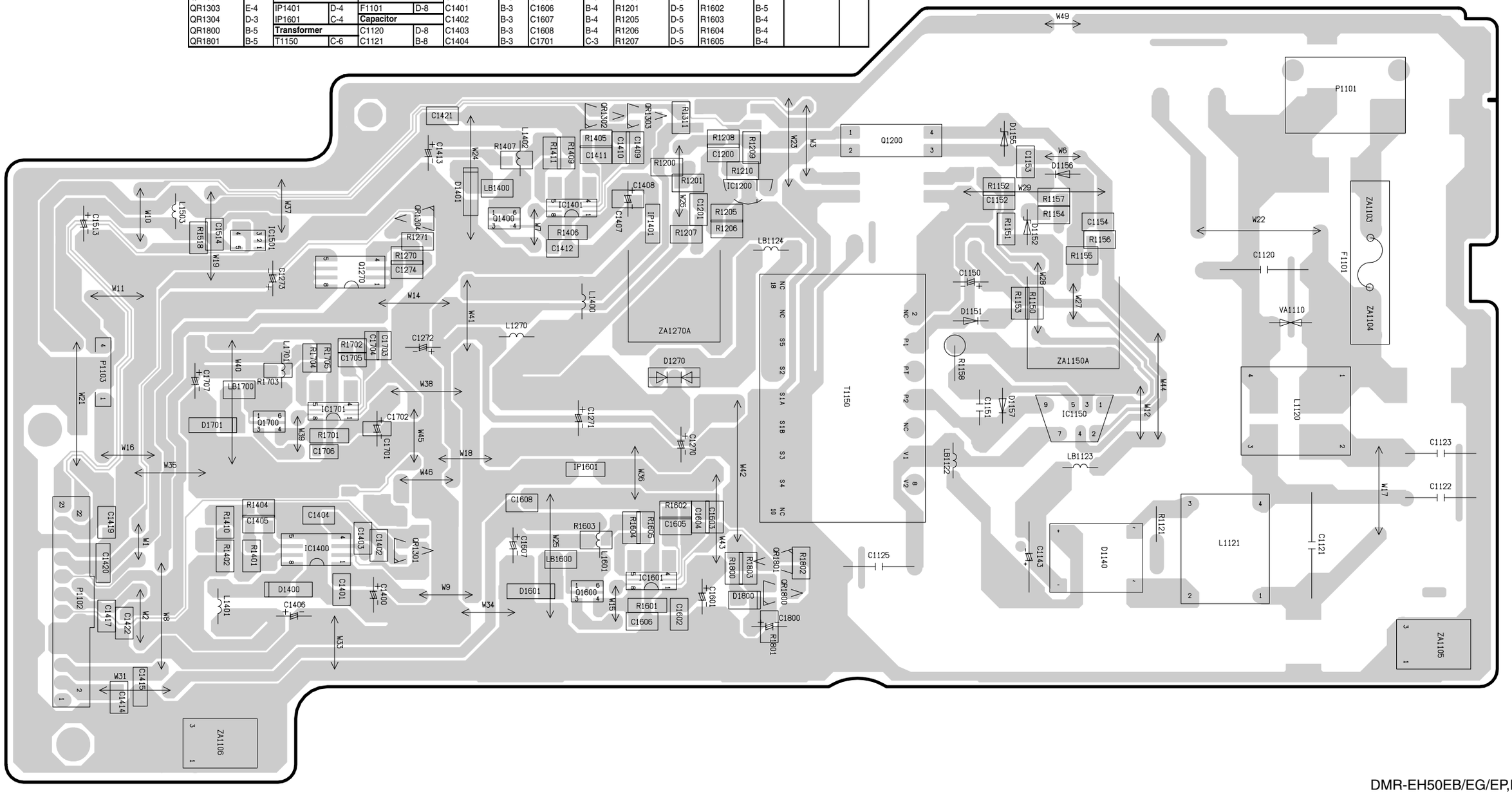
R7585	E-4
R7586	E-4
R7587	E-4
R7588	E-4
R7589	E-4
R7590	E-4
R7597	F-2
R7598	F-2
R7599	F-2
R7600	E-3
R7601	E-3
R7606	E-3
R7607	D-3
R7608	E-3
R7612	E-2
R7614	F-2
R7615	F-2
R7616	E-3
R7617	F-2
R7618	F-2
R7619	E-3
R7620	E-4
R7621	D-3
R7622	D-4
R7623	C-2
R7624	B-4
R7625	B-4
R7626	B-5
R7627	B-5
R7628	D-4
R7629	D-2
R7630	D-2
R7631	D-2
R7639	D-1
R7640	E-1
R7641	D-1
R7642	D-1
R7643	D-1
R7644	E-1
R7648	F-1
R7649	D-4
R7651	D-3
R7652	D-4
R7653	D-4
R7654	E-4
R7655	D-3

Transformer

T7501	F-3

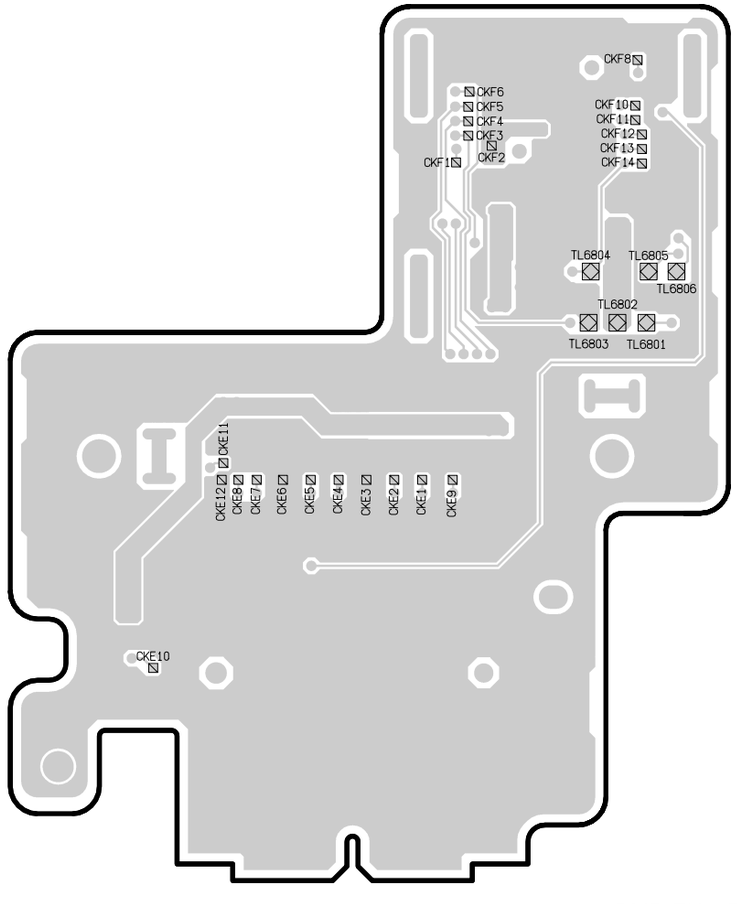
Power P.C.B.

Power P.C.B.																	
Integrated Circuit		**Connector**		**Coil**		C1122	B-9	C1405	B-2	C1702	C-3	R1208	D-5	R1701	C-3
IC1150	C-7	P1101	E-8	L1120	C-8	C1123	C-9	C1406	B-2	C1703	C-3	R1209	D-5	R1702	C-3
IC1200	D-5	P1102	B-1	L1121	B-8	C1125	B-6	C1407	D-4	C1704	C-3	R1210	D-5	R1703	C-2
IC1400	B-3	P1103	C-1	L1270	C-4	C1143	B-6	C1408	D-4	C1705	C-3	R1270	D-3	R1704	C-3
IC1401	D-4	**Diode**		L1400	D-4	C1150	D-6	C1409	D-4	C1706	C-3	R1271	D-3	R1705	C-3
IC1501	D-2	D1140	B-7	L1401	B-2	C1151	C-6	C1410	D-4	C1707	C-2	R1311	E-5	R1800	B-5
IC1601	B-4	D1151	C-6	L1402	D-4	C1152	D-6	C1411	D-4	C1800	B-5	R1401	B-2	R1801	B-5
IC1701	C-3	D1152	D-6	L1503	D-2	C1153	D-6	C1412	D-4	**Resistor**		R1402	B-2	R1802	B-5
Transistor		D1155	D-6	L1601	B-4	C1154	D-7	C1413	D-3	R1150	C-6	R1404	B-2	R1803	B-5
Q1200	D-6	D1156	D-7	L1701	C-2	C1200	D-5	C1421	E-3	R1151	D-6	R1405	D-4	**Varistor**	
Q1270	D-3	D1270	C-5	LB1122	C-6	C1201	D-5	C1513	D-1	R1152	D-6	R1406	D-4	VA1110	C-8
Q1400	D-4	D1400	B-2	LB1123	C-7	C1270	C-5	C1514	D-2	R1153	C-6	R1407	D-4		
Q1600	B-4	D1401	D-3	LB1124	C-5	C1271	C-4	C1601	B-5	R1154	D-7	R1409	D-4		
Q1700	C-2	D1601	B-4	LB1400	D-4	C1272	C-3	C1602	B-5	R1155	D-7	R1410	B-2		
Transistor-resistor		D1701	C-2	LB1600	B-4	C1273	D-2	C1603	B-5	R1156	D-7	R1411	D-4		
QR1301	B-3	D1800	B-5	LB1700	C-2	C1274	D-3	C1604	B-5	R1157	D-7	R1518	D-2		
QR1302	E-4	**IC Protector**		**Fuse**		C1400	B-3	C1605	B-5	R1200	D-5	R1601	B-4		
QR1303	E-4	IP1401	D-4	F1101	D-8	C1401	B-3	C1606	B-4	R1201	D-5	R1602	B-5		
QR1304	D-3	IP1601	C-4	**Capacitor**		C1402	B-3	C1607	B-4	R1205	D-5	R1603	B-4		
QR1800	B-5	**Transformer**		C1120	D-8	C1403	B-3	C1608	B-4	R1206	D-5	R1604	B-4		
QR1801	B-5	T1150	C-6	C1121	B-8	C1404	B-3	C1701	C-3	R1207	D-5	R1605	B-4		



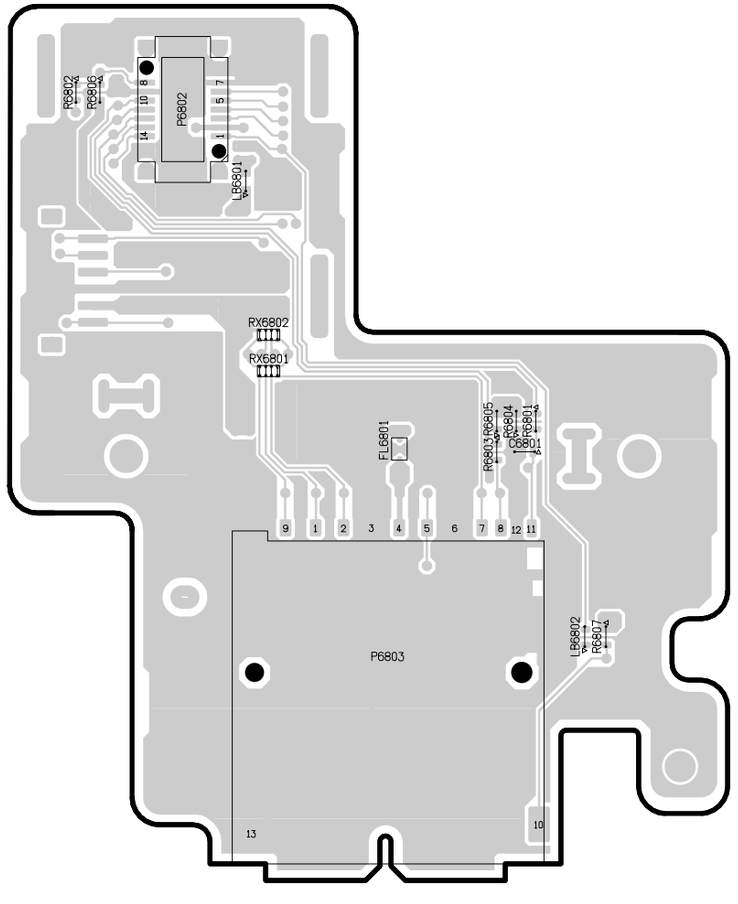
DMR-EH50EB/EG/EP,EH52EG
Power P.C.B.
(VEP01961A)

SD Card P.C.B.



(Component Side)

DMR-EH50EB/EG/EP,EH52EG
SD Card P.C.B. (Component Side)
VEP73121C:Black Type
VEP73121D:Silver Type



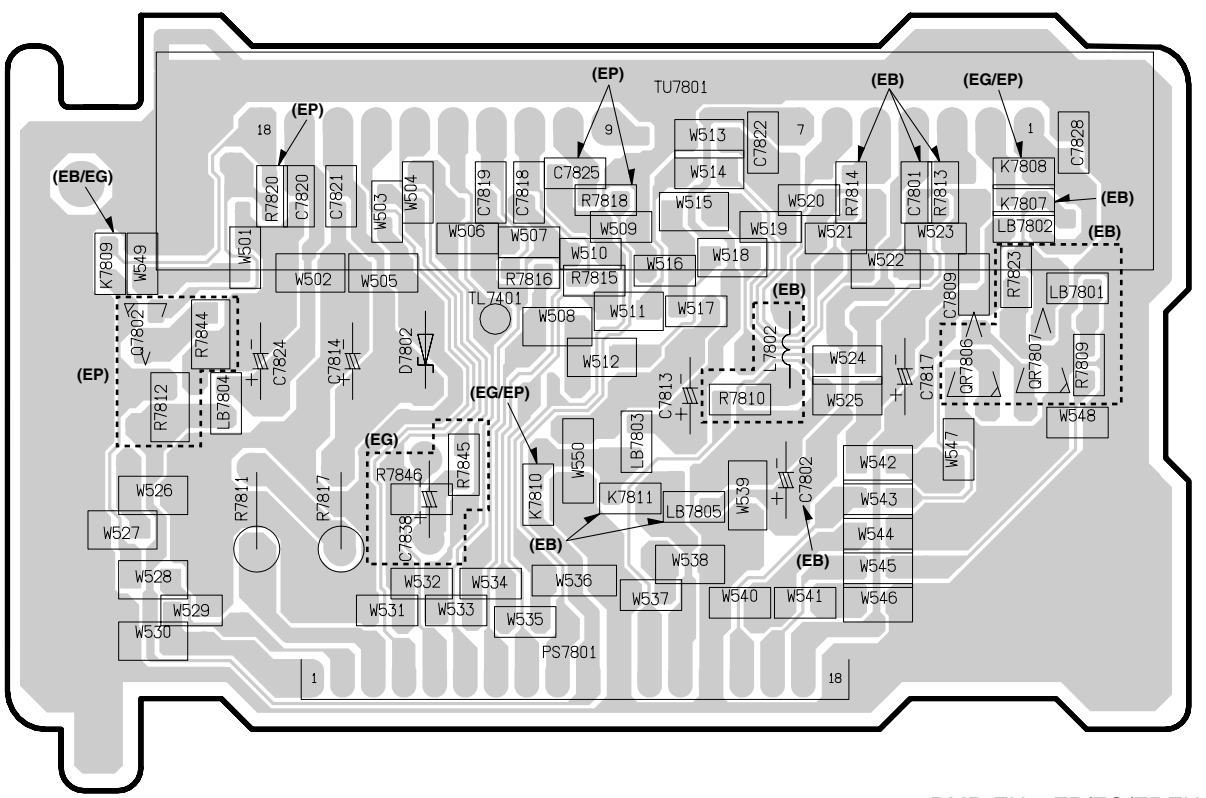
(Foil Side)

DMR-EH50EB/EG/EP,EH52EG
SD Card P.C.B. (Foil Side)
VEP73121C:Black Type
VEP73121D:Silver Type

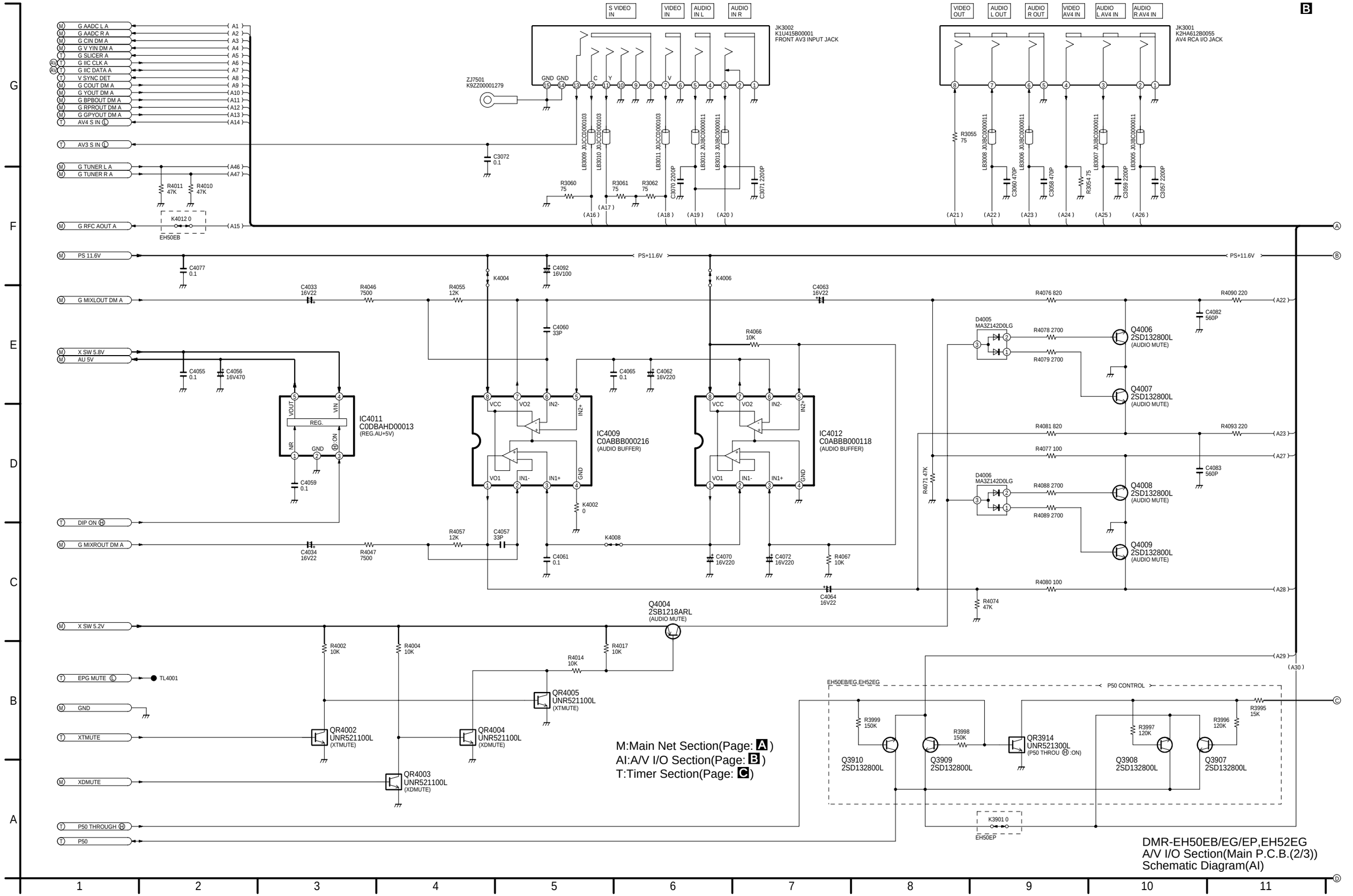
D
C
B
A

1 2 3 4 5 6 7 8 9

Tuner P.C.B.



DMR-EH50EB/EG/EP,EH52EG
Tuner P.C.B.
VEP07A77A:EH50EG,EH52EG
VEP07A77B:EH50EB
VEP07A77C:EH50EP


B
S VIDEO IN
VIDEO IN
AUDIO IN L
AUDIO IN R
JK3002
K1U415B00001
FRONT AV3 INPUT JACK
ZJ7501
K9ZZ00001279
GND GND C Y V
VIDEO OUT
AUDIO L OUT
AUDIO R OUT
VIDEO AV4 IN
AUDIO L AV4 IN
AUDIO R AV4 IN
JK3001
K2HA612B0055
AV4 RCA I/O JACK
G AADC L A
G AADC R A
G CIN DM A
G V YIN DM A
G SLICER A
G IIC CLK A
G IIC DATA A
V SYNC DET
G COUT DM A
G YOUT DM A
G BPBOUT DM A
G RPROUT DM A
G GPYOUT DM A
AV4 S IN L
AV3 S IN L
G TUNER L A
G TUNER R A
G RFC AOUT A
K4012 0
EH50EB
C3072 0.1
R3060 75
R3061 75
R3062 75
C3070 2200P
C3071 2200P
LB3009 J0JCC0000103
LB3010 J0JCC0000103
LB3011 J0JCC0000103
LB3012 J0JBC0000011
LB3013 J0JBC0000011
R3055 75
LB3008 J0JBC0000011
LB3006 J0JBC0000011
LB3007 J0JBC0000011
LB3005 J0JBC0000011
C3060 470P
C3058 470P
R3054 75
C3059 2200P
C3057 2200P
R4011 47K
R4010 47K
PS 11.6V
PS+11.6V
C4077 0.1
C4092 16V100
K4004
K4006
C4033 16V22
R4046 7500
R4055 12K
C4063 16V22
G MIXLOUT DM A
C4060 33P
R4066 10K
X SW 5.8V
AU 5V
C4055 0.1
C4056 16V470
C4065 0.1
C4062 16V220
IC4011
C0DBAHD00013
(REG.AU+5V)
REG.
VOUT
VIN
NR
GND
ON
C4059 0.1
IC4009
C0ABBB000216
(AUDIO BUFFER)
VCC
VO2
IN2-
IN2+
VO1
IN1-
IN1+
GND
K4002 0
IC4012
C0ABBB000118
(AUDIO BUFFER)
R4076 820
R4090 220
C4082 560P
D4005
MA3Z142D0LG
R4078 2700
R4079 2700
Q4006
2SD132800L
(AUDIO MUTE)
Q4007
2SD132800L
(AUDIO MUTE)
R4081 820
R4093 220
R4077 100
R4071 47K
C4083 560P
D4006
MA32142D0LG
R4088 2700
R4089 2700
Q4008
2SD132800L
(AUDIO MUTE)
Q4009
2SD132800L
(AUDIO MUTE)
R4080 100
R4074 47K
DIP ON
G MIXROUT DM A
C4034 16V22
R4047 7500
R4057 12K
C4057 33P
C4061 0.1
K4008
C4070 16V220
C4072 16V220
R4067 10K
C4064 16V22
Q4004
2SB1218ARL
(AUDIO MUTE)
X SW 5.2V
R4002 10K
R4004 10K
R4014 10K
R4017 10K
EPG MUTE L
TL4001
GND
XTMUTE
XDMUTE
QR4002
UNR521100L
(XTMUTE)
QR4004
UNR521100L
(XDMUTE)
QR4005
UNR521100L
(XTMUTE)
QR4003
UNR521100L
(XDMUTE)
P50 THROUGH H
P50
EH50EB/EG,EH52EG
P50 CONTROL
R3999 150K
R3998 150K
R3997 120K
R3996 120K
R3995 15K
Q3910
2SD132800L
Q3909
2SD132800L
QR3914
UNR521300L
(P50 THROU H :ON)
Q3908
2SD132800L
Q3907
2SD132800L
K3901 0
EH50EP
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
A19
A20
A21
A22
A23
A24
A25
A26
A27
A28
A29
A30
M:Main Net Section(Page: A)
AI:A/V I/O Section(Page: B)
T:Timer Section(Page: C)
DMR-EH50EB/EG/EP,EH52EG
A/V I/O Section(Main P.C.B.(2/3))
Schematic Diagram(AI)

M:Main Net Section(Page: A)
AI:A/V I/O Section(Page: B)
T:Timer Section(Page: C)

S VIDEO AV4 IN
S VIDEO OUT
JK3003
K2HA210B0002
AV4 Y/C JACK
C3064 0.1
R3057 75
R3059 75
R3056 75
R3058 75

COMPONENT VIDEO OUT
(PROGRESSIVE/INTERLACE)
DIGITAL AUDIO OUT
(PCM/BITSTREAM)
PR PB Y
OPTICAL
GND VCC IN
JK3903
K1U407B00006
COMPONENT
VIDEO OUT JACK
ZJ3002
K9ZZ00001279
ZJ3001
K9ZZ00001279
R3903 75
R3902 75
R3901 75
C4904 0.1
C4903 25V47
L4901 22u
C4902 0.1
C4901 6V47
ANA5V
R4903 0
G IEC OUT A

PS+11.6V
LB3003 J0JGC0000020
EH50EB
C4018 50V4.7
R4016 2.2M
C4011 50V10
R4059 0
R4094 22K
EH50EG/EP, EH52EG
C4019 35V10
C4021 35V10
C3918 50V10
C3919 50V10
C3911 35V10
C3910 35V10
C3929 50V1
C4025 35V10
C3917 50V1
C3915 50V10
R4008 82K 35V10
C4006
C4028 35V10
R4013 82K
C3928 35V10
C4023 35V10
C3916 50V1
C3914 50V10
C4005 50V22
R4007 82K
C3935 25V220
C4024 25V100
C4008 25V100
PS+11.6V

IC3001
C1AB00002100
(A/V PROCESSOR)

1	AV2 R/C IN	51	AV2 V/Y IN
2	REG2.5	52	AV2 FB IN
3	AV2 G IN	53	AV1 V IN
4	VGND	54	AV1 FB OUT
5	AV2 B IN	55	AV4 V IN
6	VCC 5V	56	EXT CTL3
7	R-Y OUT	57	AV3 V IN
8	VCC 5V	58	EXT CTL4
9	AV1 R/C OUT	59	AV4 Y IN
10	EXT CTL1	60	VCC 5V
11	B-Y OUT	61	AV3 Y IN
12	AV1 B OUT	62	VCC ALL 5V
13	NC	63	AV4 C IN
14	Y OUT(COMPONENT)	64	1/2REF GND
15	Y SAG(COMPONENT)	65	AV3 C IN
16	MUTE FIL	66	VCC 11.6V
17	AV1 G OUT	67	DT Y IN
18	VGND	68	DT C IN
19	AV4 Y OUT	69	FRONT RIN
20	Y SAG	70	FRONT LIN
21	VGND	71	9VR
22	AV4 C OUT	72	DA RIN
23	V OUT	73	DT RIN
24	V SAG	74	TU RIN
25	VCC 5V	75	AV2 RIN
26	AV1 V OUT	76	AV1 RIN
27	FSS OUT	77	AV4 RIN
28	AV2 V OUT	78	DA LIN
29	VGND	79	DT LIN
30	TUNER V IN	80	TU LIN
31	C ADC	81	AV2 LIN
32	V SYNC OUT	82	AV1 LIN
33	Y/V ADC	83	AV4 LIN
34	VCC 5V	84	FRONT LIN
35	SLICER	85	9VR
36	C SYNC OUT	86	9VREG GND
37	DET IN	87	METER L
38	SCL IN	88	METER L
39	SDA IN	89	METER R
40	V SYNC DET	90	METER R
41	ENC C IN	91	AV1 LOUT
42	V DET FIL	92	AV1 ROUT
43	ENC Y IN	93	AV2 LOUT
44	VCC 5V	94	AV2 ROUT
45	ENC R/R-Y IN	95	RF OUT
46	GND	96	AGND(R)
47	ENC G/Y IN	97	ADC OUT L
48	VGND	98	ADC OUT R
49	ENC B/B-Y IN	99	AGND(L)
50	REG2.5	100	

TL3001
R3006 8200
R3976 100
R3975 100
R3007 33
C3025 0.1
C3026 1
C3027 0.1
C3028 50V4.7
C3029 0.1
C3030 50V4.7
C3031 0.01
C3034 0.01
C3035 6V100
C3001 0.1
C3002 0.01
C3003 0.1
C3004 0.1
C3005 6V470
C3006 6V470
C3007 10V470
C3008 10V100
C4003 0.1
C3009 10V470
C3010 10V100
C3011 0.1
C3012 10V470
C3013 25V47:EH50EB 10V100:EH50EG/EP, EH52EG
C3014 0.1
BOOSTER+5V
PS+5V
C4027 50V22
C4067 25V220
C3039 0.1
C3038 0.1
C3022 0.1
C3021 0.1
C3020 0.1
C3019 0.1
C3018 0.1
C3017 0.1
C3016 0.1
C3015 0.1
R4006 82K

R3918 470
R3914 470
R3913 10K
R3912 10K
C3962 220P
C3961 220P
LB3912 J0JBC0000011
LB3913 J0JBC0000011
R3922 470
R3923 470
R3983 10K
R3984 10K
C3955 220P
C3956 220P
LB3907 J0JBC0000011
LB3908 J0JBC0000011
R3993 1K
C3957 470P
R3994 47K
R3991 47K
R3992 1K
C3958 470P
LB3911 J0JGC0000020
R3989 1K
R3990 47K
R3987 47K
C3953 470P
C3952 47P
C3951 47P
R3988 1K
C3954 470P
R3929 75
R3927 75
R3926 75
R3925 75
R3932 75
R3928 75

JK3901
K1FB242B0004:EH50EB
K1FB242B0005:EH50EG/EP,EH52EG
SCART I/O JACK

AV1 (TV)

1	AUDIO OUT CH2(R)
2	AUDIO IN CH2(R)
3	AUDIO OUT CH1(L)
4	GND(A)
5	GND(BLUE)
6	AUDIO IN CH1(L)
7	BLUE
8	PB +12V
9	GND(GREEN)
10	-/CONTROL
11	GREEN
12	-/DATA
13	GND(RED)
14	GND(BLANK)
15	RED/C OUT
16	BLANKING
17	GND(V OUT)
18	GND(V IN)
19	VIDEO OUT/Y OUT
20	VIDEO IN
21	GND

D3901 MA2C165001VT
R3919 75
R3924 220
R3920 75
R3921 75
R3930 75
R3934 75
R3935 75

AV2 (DECODER/ EXT)

1	AUDIO OUT CH2(R)
2	AUDIO IN CH2(R)
3	AUDIO OUT CH1(L)
4	GND(A)
5	GND(BLUE)
6	AUDIO IN CH1(L)
7	BLUE
8	AV2 +12V
9	GND(GREEN)
10	-/CONTROL
11	GREEN
12	-/DATA
13	GND(RED)
14	GND(BLANK)
15	RED/C IN
16	BLANKING
17	GND(V OUT)
18	GND(V IN)
19	VIDEO OUT
20	VIDEO IN/Y IN
21	GND

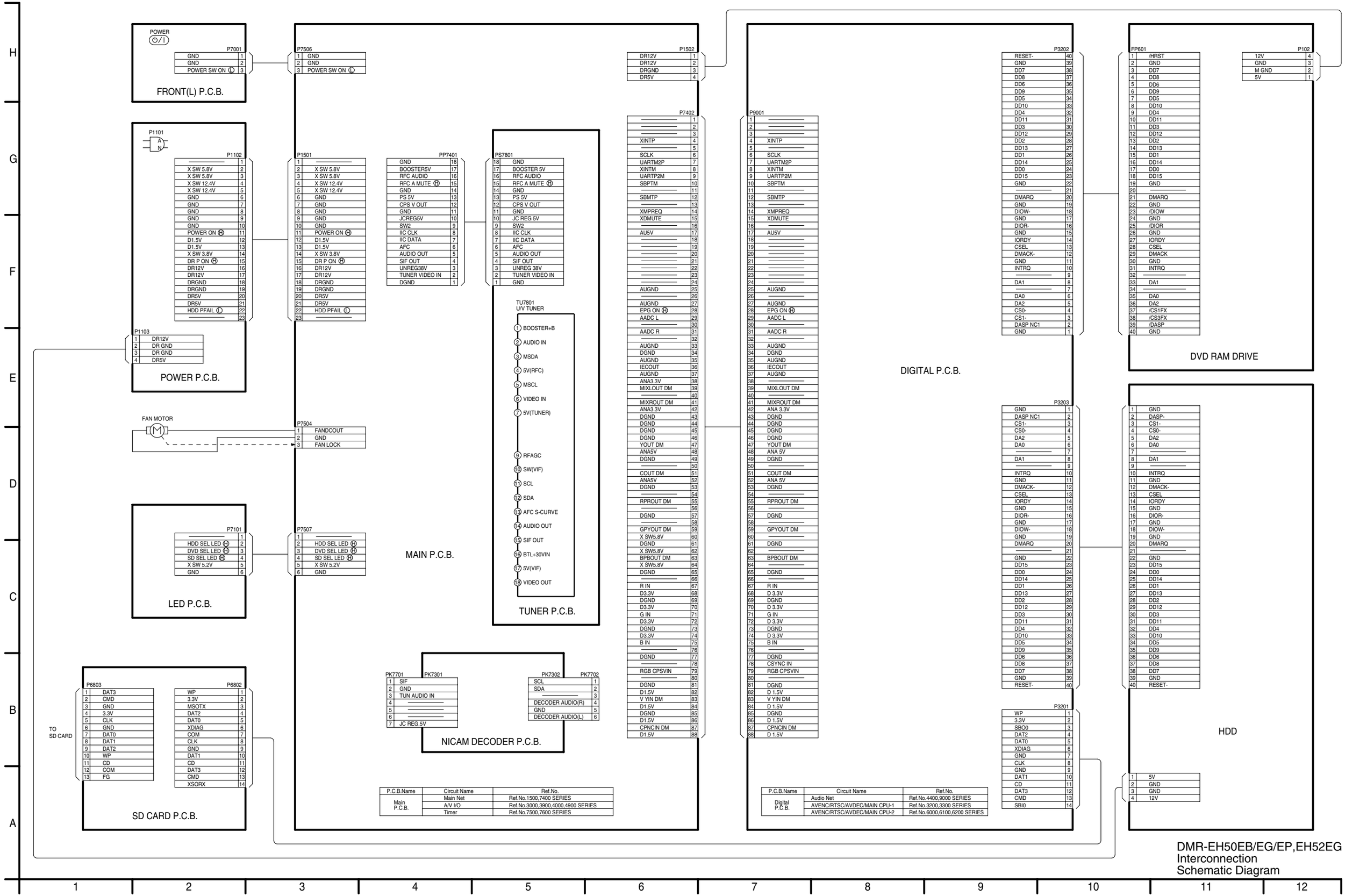
AV2-BPIN
G AV2 VIN A
AV2 BLANKING
G R C IN A
G G IN A
G B IN A
G TU VIDEO A
G CPS VOUT A
LB3001 J0JGC0000020
PS 5V
LB3002 J0JGC0000020
BOOSTER+5V
C3033 0.01
C3032 6V100

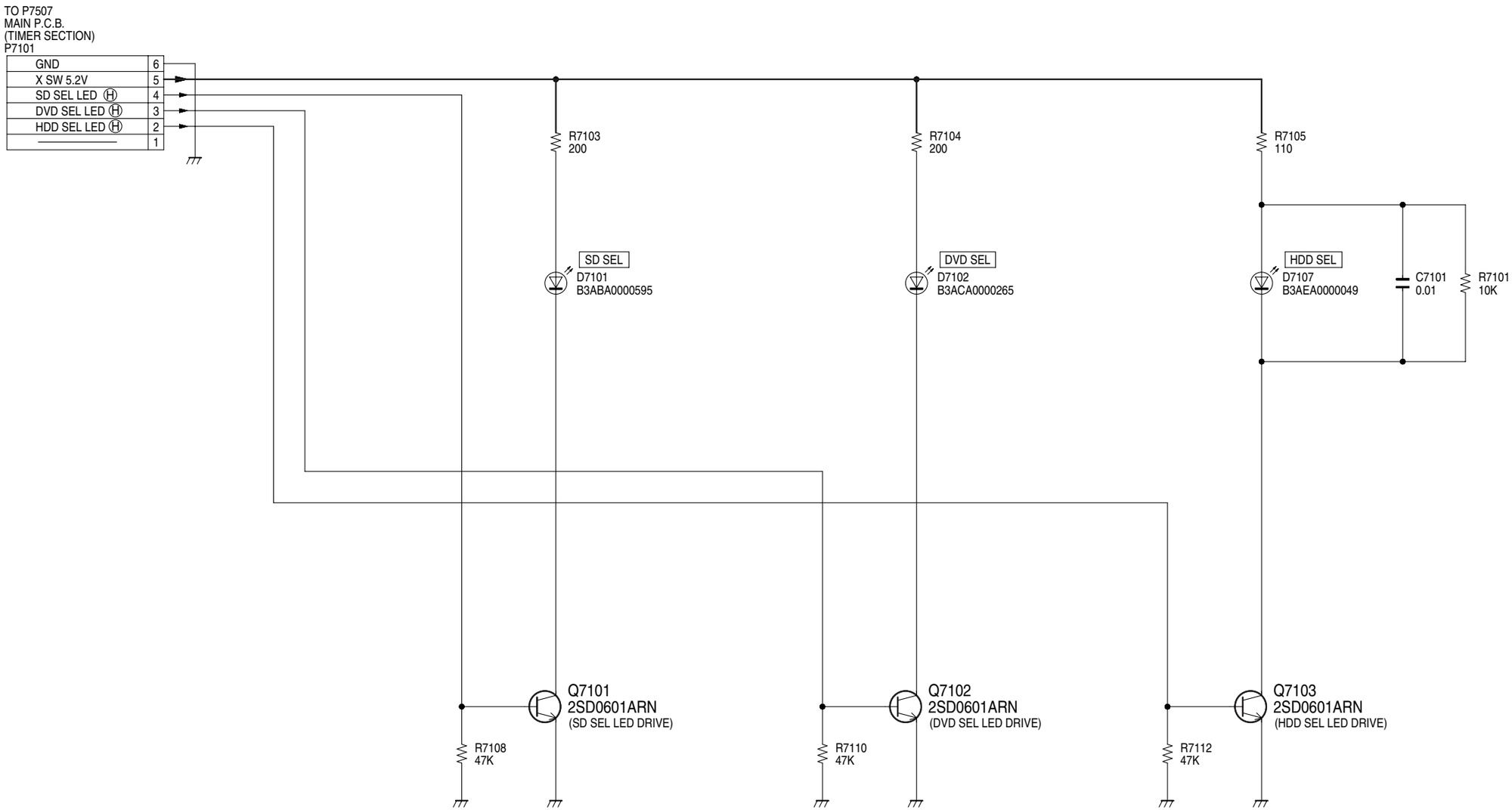
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

DMR-EH50EB/EG/EP,EH52EG
A/V I/O Section
(Main P.C.B.(2/3))
Schematic Diagram(AI)

DMR-EH50EB/EG/EP,EH52EG A/V I/O Section (Main P.C.B.(2/3)) Schematic Diagram(AI)

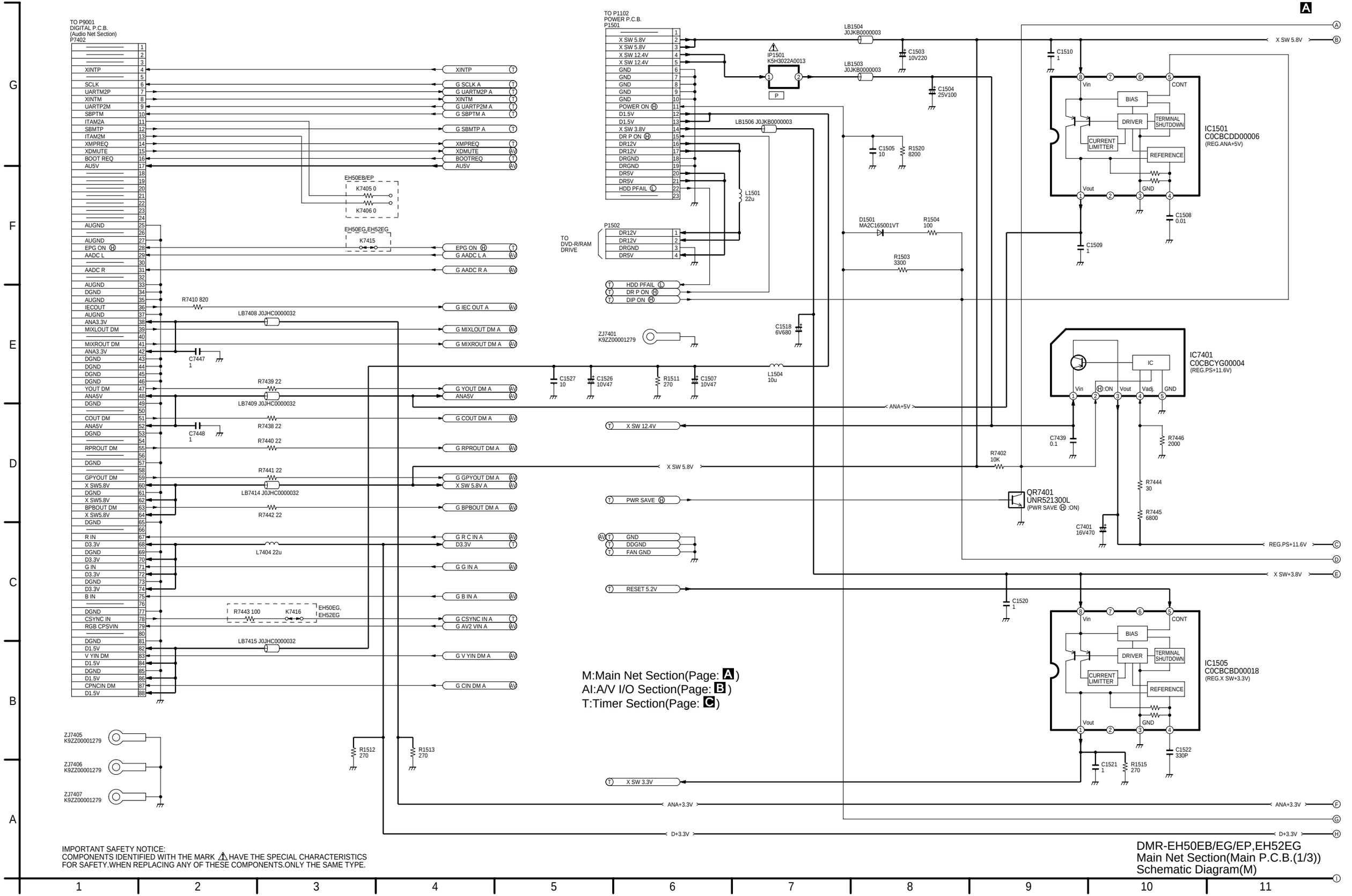
12 13 14 15 16 17 18 19 20 21 22


POWER
P7001
GND 1
GND 2
POWER SW ON (L) 3
FRONT(L) P.C.B.
P7506
1 GND
2 GND
3 POWER SW ON (L)
P1502
DR12V 1
DR12V 2
DRGND 3
DR5V 4
P1101
P1102
X SW 5.8V 2
X SW 5.8V 3
X SW 12.4V 4
X SW 12.4V 5
GND 6
GND 7
GND 8
GND 9
GND 10
POWER ON (H) 11
D1.5V 12
D1.5V 13
X SW 3.8V 14
DR P ON (H) 15
DR12V 16
DR12V 17
DRGND 18
DRGND 19
DR5V 20
DR5V 21
HDD PFAIL (L) 22
23
P1501
2 X SW 5.8V
3 X SW 5.8V
4 X SW 12.4V
5 X SW 12.4V
6 GND
7 GND
8 GND
9 GND
10 GND
11 POWER ON (H)
12 D1.5V
13 D1.5V
14 X SW 3.8V
15 DR P ON (H)
16 DR12V
17 DR12V
18 DRGND
19 DRGND
20 DR5V
21 DR5V
22 HDD PFAIL (L)
23
PP7401
GND 18
BOOSTER5V 17
RFC AUDIO 16
RFC A MUTE (H) 15
GND 14
PS 5V 13
CPS V OUT 12
GND 11
JCREG5V 10
SW2 9
IIC CLK 8
IIC DATA 7
AFC 6
AUDIO OUT 5
SIF OUT 4
UNREG38V 3
TUNER VIDEO IN 2
DGND 1
PS7801
18 GND
17 BOOSTER 5V
16 RFC AUDIO
15 RFC A MUTE (H)
14 GND
13 PS 5V
12 CPS V OUT
11 GND
10 JC REG 5V
9 SW2
8 IIC CLK
7 IIC DATA
6 AFC
5 AUDIO OUT
4 SIF OUT
3 UNREG 38V
2 TUNER VIDEO IN
1 GND
TU7801
U/V TUNER
1 BOOSTER+B
2 AUDIO IN
3 MSDA
4 5V(RFC)
5 MSCL
6 VIDEO IN
7 5V(TUNER)
9 RFAGC
10 SW(VIF)
11 SCL
12 SDA
13 AFC S-CURVE
14 AUDIO OUT
15 SIF OUT
16 BTL+30VIN
17 5V(VIF)
18 VIDEO OUT
TUNER P.C.B.
P1103
1 DR12V
2 DR GND
3 DR GND
4 DR5V
POWER P.C.B.
FAN MOTOR
P7504
1 FANDCOUT
2 GND
3 FAN LOCK
P7101
HDD SEL LED (H) 2
DVD SEL LED (H) 3
SD SEL LED (H) 4
X SW 5.2V 5
GND 6
LED P.C.B.
P7507
2 HDD SEL LED (H)
3 DVD SEL LED (H)
4 SD SEL LED (H)
5 X SW 5.2V
6 GND
MAIN P.C.B.
P7402
XINTP 4
SCLK 6
UARTM2P 7
XINTM 8
UARTP2M 9
SBPTM 10
SBMTP 12
XMPREQ 14
XDMUTE 15
AU5V 17
AUGND 25
AUGND 27
EPG ON (H) 28
AADC L 29
AADC R 31
AUGND 33
DGND 34
AUGND 35
IECOUT 36
AUGND 37
ANA3.3V 38
MIXLOUT DM 39
MIXROUT DM 41
ANA3.3V 42
DGND 43
DGND 44
DGND 45
DGND 46
YOUT DM 47
ANA5V 48
DGND 49
COUT DM 51
ANA5V 52
DGND 53
RPROUT DM 55
DGND 57
GPYOUT DM 59
X SW5.8V 60
DGND 61
X SW5.8V 62
BPBOUT DM 63
X SW5.8V 64
DGND 65
R IN 67
D3.3V 68
DGND 69
D3.3V 70
G IN 71
D3.3V 72
DGND 73
D3.3V 74
B IN 75
DGND 77
RGB CPSVIN 79
DGND 81
D1.5V 82
V YIN DM 83
D1.5V 84
DGND 85
D1.5V 86
CPNCIN DM 87
D1.5V 88
P9001
4 XINTP
6 SCLK
7 UARTM2P
8 XINTM
9 UARTP2M
10 SBPTM
12 SBMTP
14 XMPREQ
15 XDMUTE
17 AU5V
25 AUGND
27 AUGND
28 EPG ON (H)
29 AADC L
31 AADC R
33 AUGND
34 DGND
35 AUGND
36 IECOUT
37 AUGND
39 MIXLOUT DM
41 MIXROUT DM
42 ANA 3.3V
43 DGND
44 DGND
45 DGND
46 DGND
47 YOUT DM
48 ANA 5V
49 DGND
51 COUT DM
52 ANA 5V
53 DGND
55 RPROUT DM
57 DGND
59 GPYOUT DM
61 DGND
63 BPBOUT DM
65 DGND
67 R IN
68 D 3.3V
69 DGND
70 D 3.3V
71 G IN
72 D 3.3V
73 DGND
74 D 3.3V
75 B IN
77 DGND
78 CSYNC IN
79 RGB CPSVIN
81 DGND
82 D 1.5V
83 V YIN DM
84 D 1.5V
85 DGND
86 D 1.5V
87 CPNCIN DM
88 D 1.5V
DIGITAL P.C.B.
P3202
RESET- 40
GND 39
DD7 38
DD8 37
DD6 36
DD9 35
DD5 34
DD10 33
DD4 32
DD11 31
DD3 30
DD12 29
DD2 28
DD13 27
DD1 26
DD14 25
DD0 24
DD15 23
GND 22
21
DMARQ 20
GND 19
DIOW- 18
GND 17
DIOR- 16
GND 15
IORDY 14
CSEL 13
DMACK- 12
GND 11
INTRQ 10
9
DA1 8
7
DA0 6
DA2 5
CS0- 4
CS1- 3
DASP NC1 2
GND 1
FP601
1 /HRST
2 GND
3 DD7
4 DD8
5 DD6
6 DD9
7 DD5
8 DD10
9 DD4
10 DD11
11 DD3
12 DD12
13 DD2
14 DD13
15 DD1
16 DD14
17 DD0
18 DD15
19 GND
20
21 DMARQ
22 GND
23 /DIOW
24 GND
25 /DIOR
26 GND
27 IORDY
28 CSEL
29 DMACK
30 GND
31 INTRQ
32
33 DA1
34
35 DA0
36 DA2
37 /CS1FX
38 /CS3FX
39 /DASP
40 GND
DVD RAM DRIVE
P102
12V 4
GND 3
M GND 2
5V 1
P3203
GND 1
DASP NC1 2
CS1- 3
CS0- 4
DA2 5
DA0 6
7
DA1 8
9
INTRQ 10
GND 11
DMACK- 12
CSEL 13
IORDY 14
GND 15
DIOR- 16
GND 17
DIOW- 18
GND 19
DMARQ 20
21
GND 22
DD15 23
DD0 24
DD14 25
DD1 26
DD13 27
DD2 28
DD12 29
DD3 30
DD11 31
DD4 32
DD10 33
DD5 34
DD9 35
DD6 36
DD8 37
DD7 38
GND 39
RESET- 40
P3201
WP 1
3.3V 2
SBO0 3
DAT2 4
DAT0 5
XDIAG 6
GND 7
CLK 8
GND 9
DAT1 10
CD 11
DAT3 12
CMD 13
SBI0 14
1 GND
2 DASP-
3 CS1-
4 CS0-
5 DA2
6 DA0
7
8 DA1
9
10 INTRQ
11 GND
12 DMACK-
13 CSEL
14 IORDY
15 GND
16 DIOR-
17 GND
18 DIOW-
19 GND
20 DMARQ
21
22 GND
23 DD15
24 DD0
25 DD14
26 DD1
27 DD13
28 DD2
29 DD12
30 DD3
31 DD11
32 DD4
33 DD10
34 DD5
35 DD9
36 DD6
37 DD8
38 DD7
39 GND
40 RESET-
HDD
1 5V
2 GND
3 GND
4 12V
TO SD CARD
P6803
1 DAT3
2 CMD
3 GND
4 3.3V
5 CLK
6 GND
7 DAT0
8 DAT1
9 DAT2
10 WP
11 CD
12 COM
13 FG
P6802
WP 1
3.3V 2
MSOTX 3
DAT2 4
DAT0 5
XDIAG 6
COM 7
CLK 8
GND 9
DAT1 10
CD 11
DAT3 12
CMD 13
XSORX 14
SD CARD P.C.B.
PK7701
PK7301
1 SIF
2 GND
3 TUN AUDIO IN
4
5
6
7 JC REG.5V
PK7302
PK7702
SCL 1
SDA 2
3
DECODER AUDIO(R) 4
GND 5
DECODER AUDIO(L) 6
NICAM DECODER P.C.B.
P.C.B.Name | Circuit Name | Ref.No.
Main P.C.B. | Main Net | Ref.No.1500,7400 SERIES
A/V I/O | Ref.No.3000,3900,4000,4900 SERIES
Timer | Ref.No.7500,7600 SERIES
P.C.B.Name | Circuit Name | Ref.No.
Digital P.C.B. | Audio Net | Ref.No.4400,9000 SERIES
AVENC/RTSC/AVDEC/MAIN CPU-1 | Ref.No.3200,3300 SERIES
AVENC/RTSC/AVDEC/MAIN CPU-2 | Ref.No.6000,6100,6200 SERIES
DMR-EH50EB/EG/EP,EH52EG
Interconnection
Schematic Diagram



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH50EB/EG/EP,EH52EG
LED Schematic Diagram



M:Main Net Section(Page: A)
AI:A/V I/O Section(Page: B)
T:Timer Section(Page: C)

IMPORTANT SAFETY NOTICE:
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DMR-EH50EB/EG/EP,EH52EG
Main Net Section(Main P.C.B.(1/3))
Schematic Diagram(M)

M:Main Net Section(Page: A)
AI:A/V I/O Section(Page: B)
T:Timer Section(Page: C)

IC1511
C0CBCDD00008
(REG.X SW+5.2V)

IC7403
C0CBCDD00006
(REG.PS+5.2V)

IC1510
C0CBCDG00006
(REG.+5V)

IC7402
C0DBCHD00004
(REG.BOOSTER+5V)

IC1502
C0CBCBD00018
(REG.ANA+3.3V)

IC1504
C0CBCYH00003
(REG.D+3.3V)

TO PS7801
Tuner P.C.B.
PP7401

18	GND
17	BOOSTER5V
16	RFC AUDIO
15	RFC A MUTE (H)
14	GND
13	PS5V
12	CPS V OUT
11	GND
10	JCREG5V
9	SW2
8	IIC CLK
7	IIC DATA
6	AFC
5	AUDIO OUT
4	SIF OUT
3	UNREG38V
2	TUNER VIDEO IN
1	DGND

TO
Nicam Decoder P.C.B.

TO PK7301
PK7701

1	SIF
2	GND
3	TUN AUDIO IN
4	
5	
6	
7	JC REG.5V

TO PK7302
PK7702

1	SCL
2	SDA
3	
4	DECODER AUDIO(R)
5	GND
6	DECODER AUDIO(L)

AV2 PB (H) CONTROL

DMR-EH50EB/EG/EP,EH52EG
Main Net Section(Main P.C.B.(1/3))
Schematic Diagram(M)

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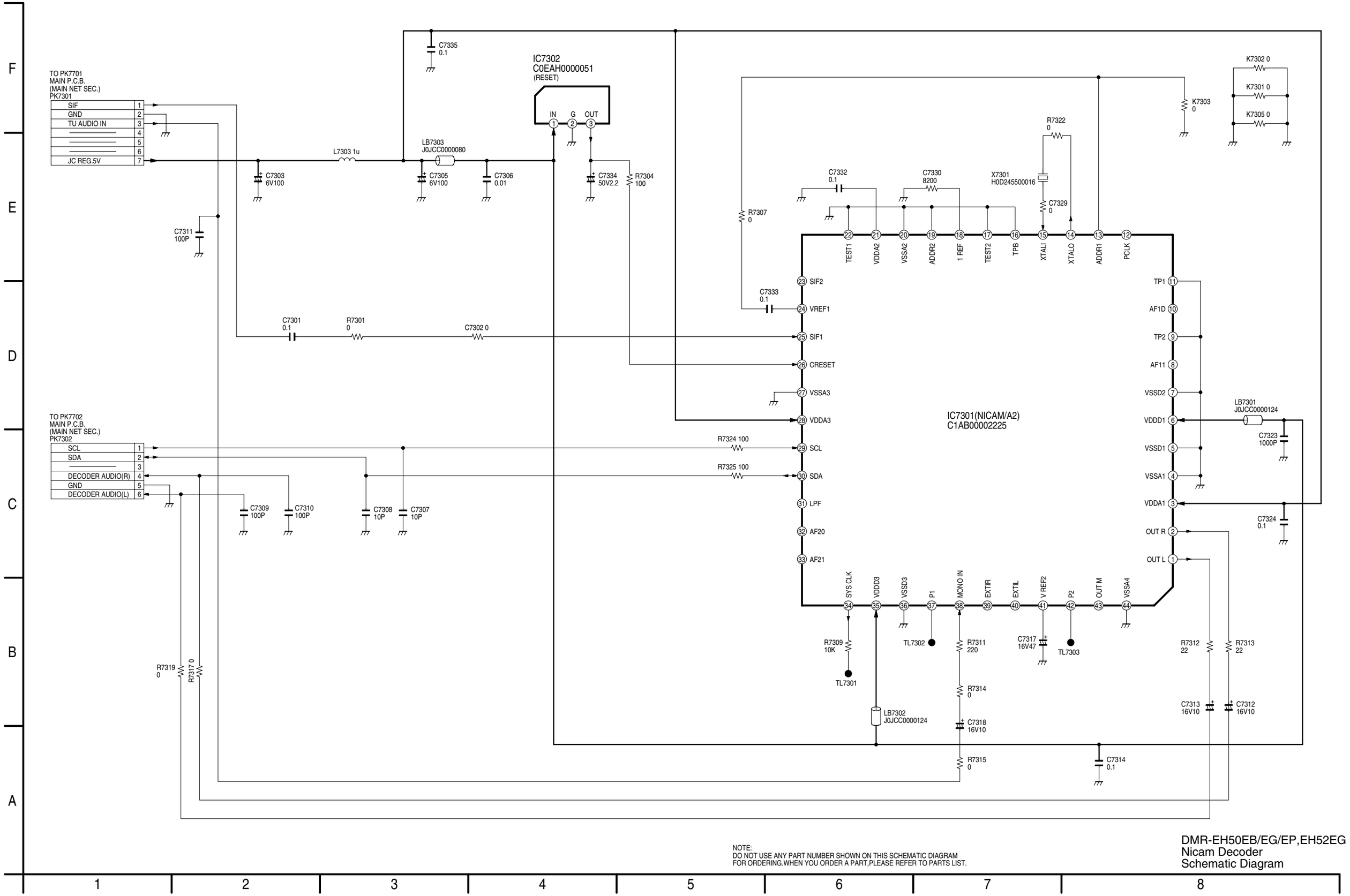
DMR-EH50EB/EG/EP,EH52EG
Main Net Section(Main P.C.B.(1/3))
Schematic Diagram(M)



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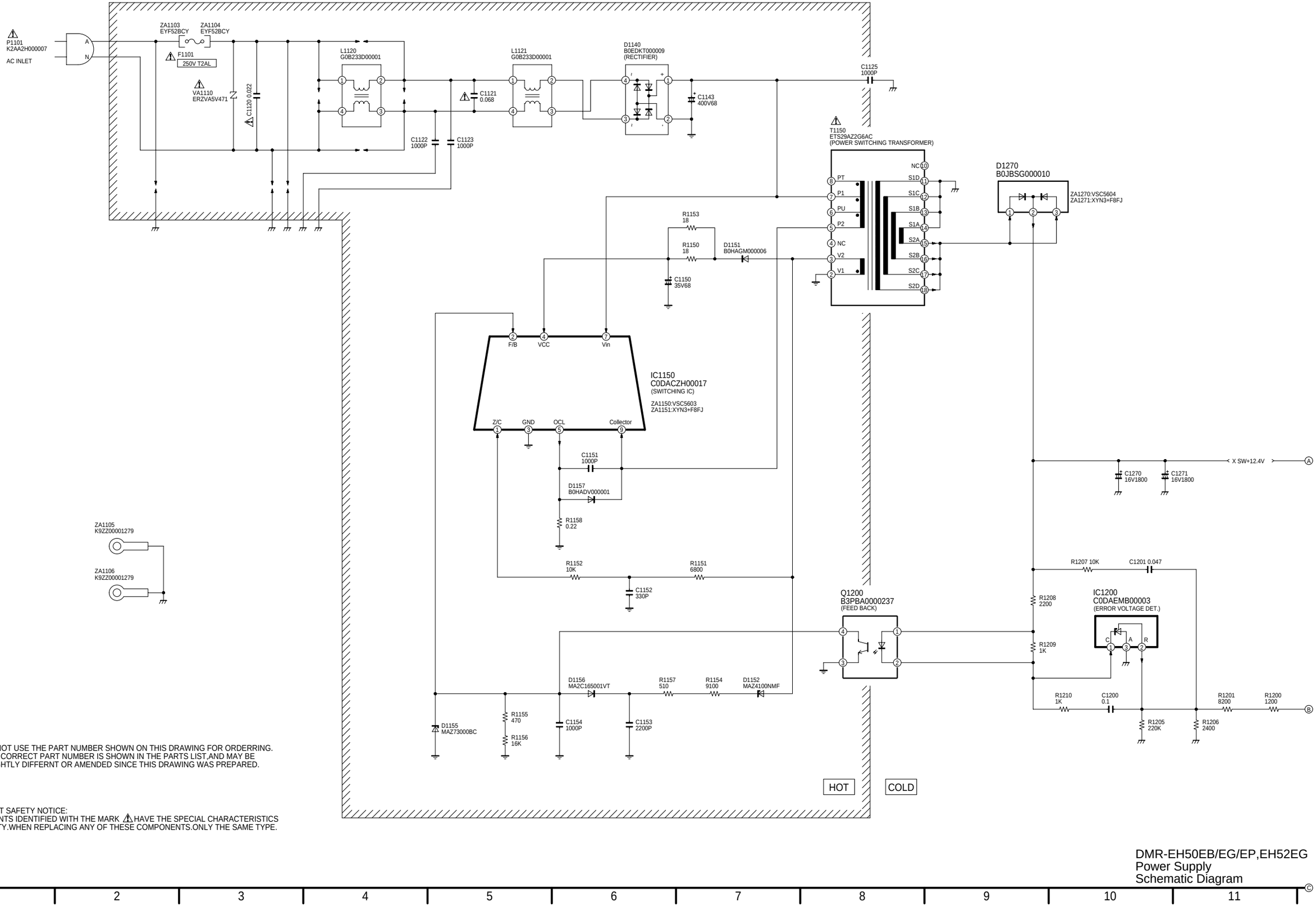
DMR-EH50EB/EG/EP,EH52EG
Nicam Decoder
Schematic Diagram



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THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE
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DMR-EH50EB/EG/EP,EH52EG
Power Supply
Schematic Diagram

L1400 10u

L1402 15u

LB1400
J0JHC0000048

D1401
B0JCPD000021

IP1401
K5H3022A0013

P

Q1400
B1DHDD000022
(REG.DR+5V)

C1412
0.01

R1406
D1BFR0270001

IC1401
C0DBAKG00005
(DC-DC CONVERTER)

Current Sence
FET Gate Drive
GND
Feed Back
Vin
PWON
Vref/SS
CC

R1409
4700
R1411
12K
R1407
2700
C1421
0.1
C1413
10V470
C1411
180P
R1405
51K
C1410
0.022
C1409
0.1
C1407
25V220
C1408
0.1

L1601 15u

LB1600
J0JHC0000048

D1601
B0JCPD000021

IP1601
K5H3022A0013

P

Q1600
B1DHDD000022
(REG.XSW+5.8V OUT)

C1606
0.01

R1601
D1BFR0150001

IC1601
C0DBAKG00007
(DC-DC CONVERTER)

R1605
2700
R1604
15K
R1603
2400
C1608
0.1
C1607
10V680
C1605
180P
R1602
51K
C1603
0.1
C1604
0.1
C1601
25V220
C1602
0.1

R1410 150
R1404 1K
R1402
820
C1406
6V680
L1401
33u
R1401
100K
C1405
1000P

D1400
B0JCPE000015

IC1400
C0DAAJG00007
(DC-DC CONVERTER)

Vout
Amp(-)
Amp out
GND
Vin
ON/OFF CTL.
OSC
S/S

C1400
25V220
C1401
1
C1402
0.01
C1403
390P
C1404
4700P

QR1301
UNR221300L
(POWER ON Ⓗ :ON)

L1270
10u

C1272
16V1000
R1311
4700

QR1303
UNR221300L
(POWER ON/OFF CTL.SW)

QR1302
UNR221300L
(DR P ON Ⓗ :ON)

C1273
16V120

Q1270
B1DHED000008
(DR+12V OUT)

R1270
4700
R1271
4700
C1274
0.1

QR1304
UNR221300L
(DR P ON Ⓗ :ON)

R1800
470
D1800
MA2J11100L
R1801
100K
C1800
25V47

QR1800
UNR211300L
(SWITCHING)

R1803
10K
R1802
4700

QR1801
UNR221300L
(SWITCHING)

L1701 22u

LB1700
J0JHC0000048

D1701
B0JCPE000015

Q1700
B1DDCC000009
(REG.XSW+3.8V)

C1706
0.01

R1701
D1BFR047A010

IC1701
C0DBAKG00005
(DC-DC CONVERTER)

R1705
4700
R1704
10K
R1703
0
C1707
6V680
C1705
120P
R1702
33K
C1703
0.1
C1704
0.01
C1701
25V220
C1702
0.1

L1503
10u

R1518 10K

IC1501
C0EBJ0000143
(HDD PFAIL Ⓛ OUT)

VCC
VOUT
Vref

C1513
10V470
C1514
0.01

TO P1501
MAIN P.C.B.
(MAIN NET SECTION)
P1102

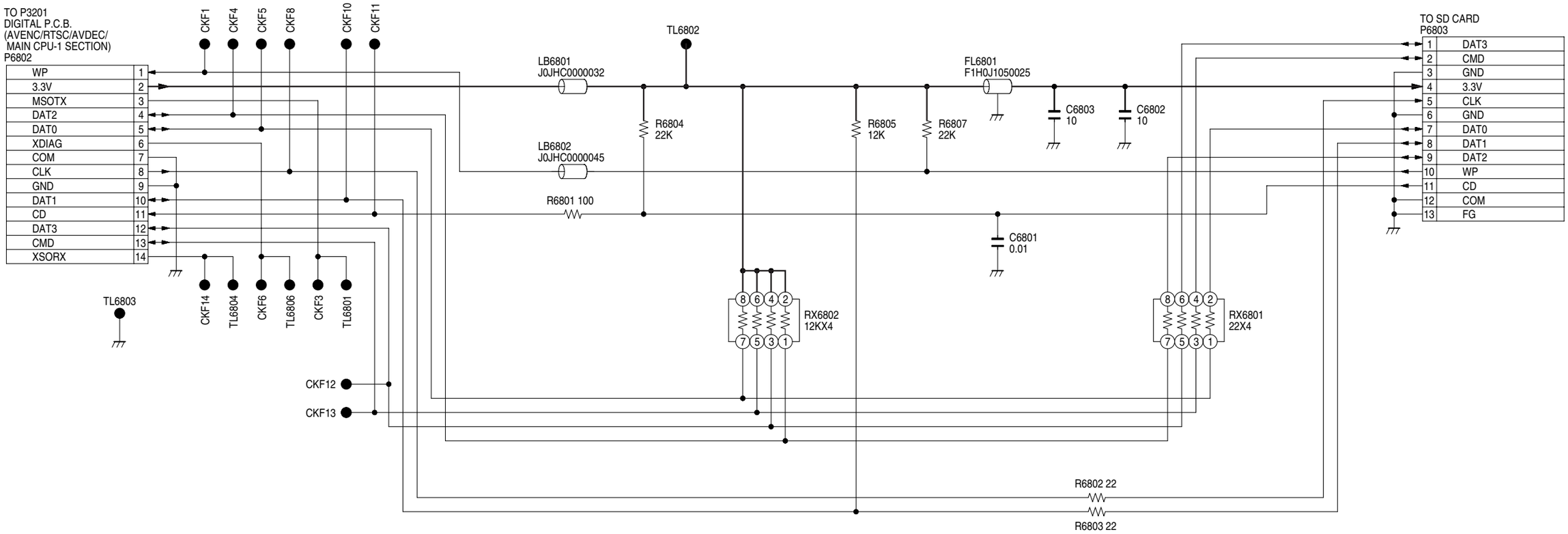
1	
2	X SW 5.8V
3	X SW 5.8V
4	X SW 12.4V
5	X SW 12.4V
6	GND
7	GND
8	GND
9	GND
10	GND
11	POWER ON Ⓗ
12	D1.5V
13	D1.5V
14	X SW 3.8V
15	DR P ON Ⓗ
16	DR12V
17	DR12V
18	DRGND
19	DRGND
20	DR5V
21	DR5V
22	HDD PFAIL Ⓛ
23	

TO HDD
P1103

1	DR12V
2	DR GND
3	DR GND
4	DR5V

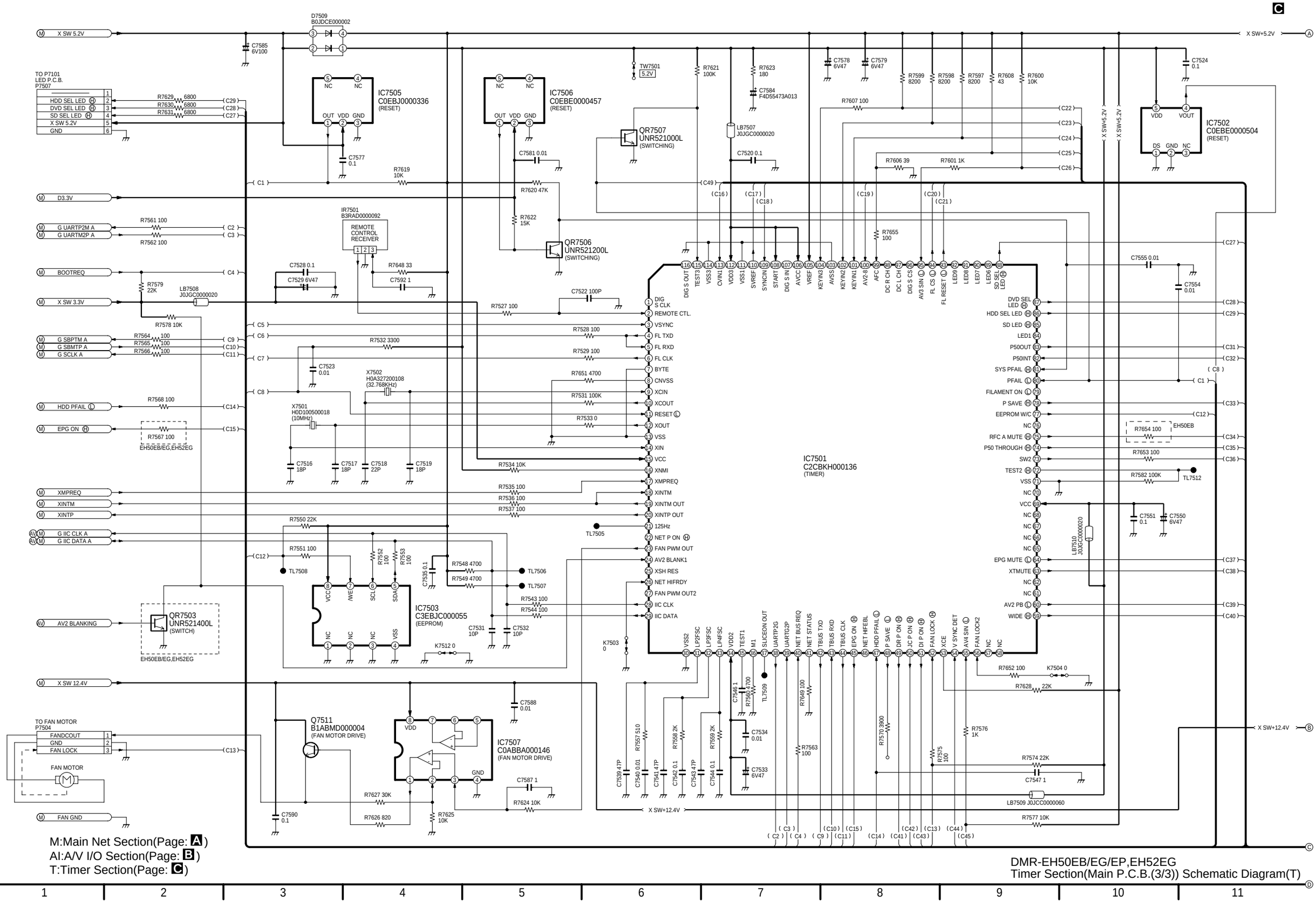
DMR-EH50EB/EG/EP,EH52EG
Power Supply
Schematic Diagram

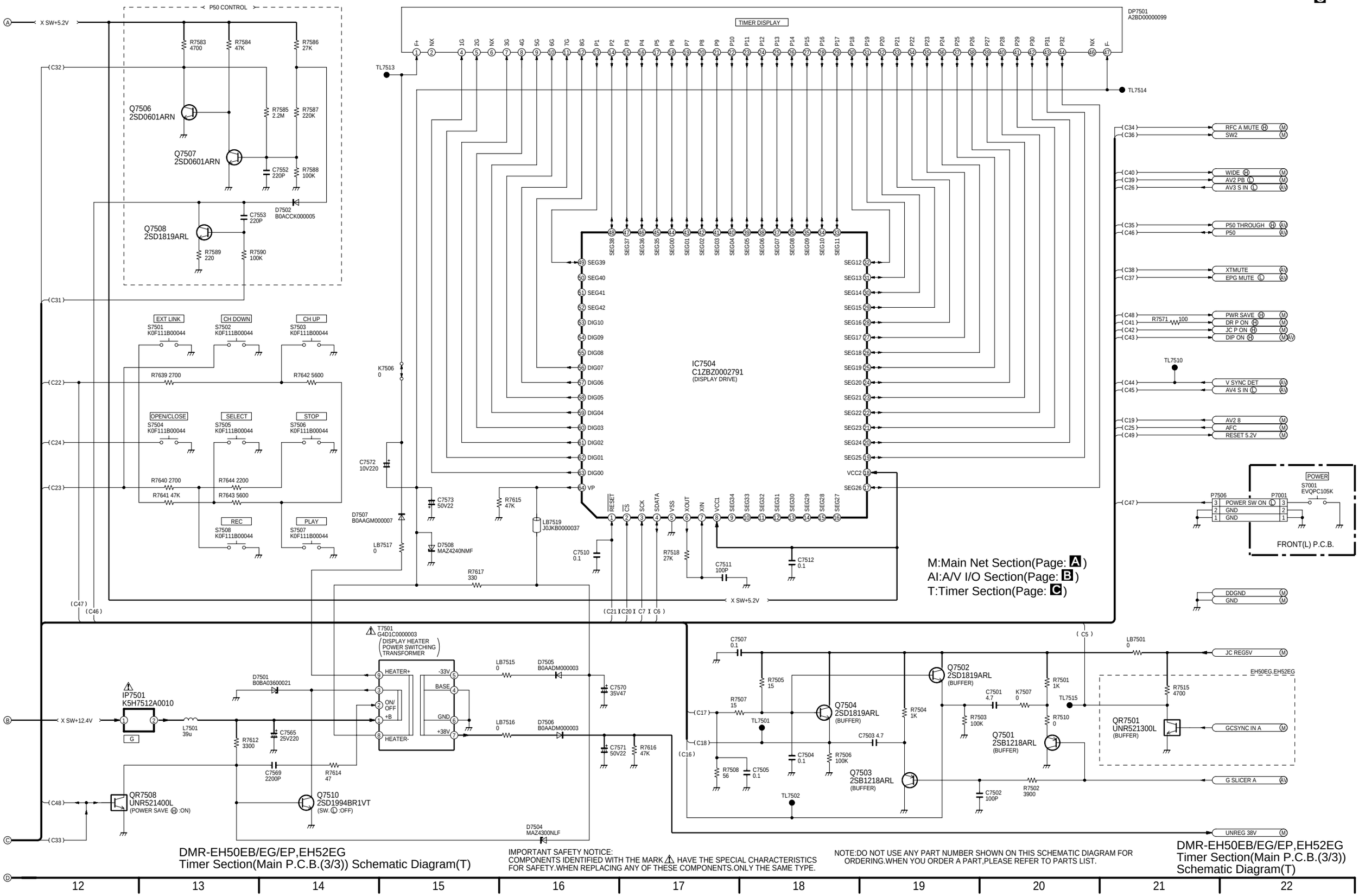
DMR-EH50EB/EG/EP,EH52EG
Power Supply
Schematic Diagram



NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH50EB/EG/EP,EH52EG
SD Card Schematic Diagram


C
X SW 5.2V
D7509 B0JDCE000002
C7585 6V100
X SW+5.2V
TO P7101 LED P.C.B. P7507
HDD SEL LED (H)
DVD SEL LED (H)
SD SEL LED (H)
X SW 5.2V
GND
R7629 6800
R7630 6800
R7631 6800
IC7505 C0EBJ0000336 (RESET)
C7577 0.1
IC7506 C0EBE0000457 (RESET)
C7581 0.1
R7620 47K
R7622 15K
TW7501 5.2V
R7621 100K
R7623 180
C7584 F4D55473A013
QR7507 UNR521000L (SWITCHING)
LB7507 J0JGC0000020
C7520 0.1
R7619 10K
R7606 39
R7601 1K
R7607 100
R7599 8200
R7598 8200
R7597 8200
R7608 43
R7600 10K
C7578 6V47
C7579 6V47
C7524 0.1
IC7502 C0EBE0000504 (RESET)
D3.3V
G UARTP2M A
G UARTM2P A
R7561 100
R7562 100
IR7501 B3RAD0000092
REMOTE CONTROL RECEIVER
C7528 0.1
C7529 6V47
R7648 33
C7592 1
QR7506 UNR521200L (SWITCHING)
BOOTREQ
R7579 22K
LB7508 J0JGC0000020
X SW 3.3V
R7578 10K
R7655 100
C7522 100P
R7527 100
G SBPTM A
G SBMTP A
G SCLK A
R7564 100
R7565 100
R7566 100
R7532 3300
C7523 0.01
X7502 H0A327200108 (32.768KHz)
HDD PFAIL (L)
EPG ON (H)
R7568 100
R7567 100
EH50EB/EG,EH52EG
X7501 H0D100500018 (10MHz)
C7516 18P
C7517 18P
C7518 22P
C7519 18P
R7534 10K
R7535 100
R7536 100
R7537 100
TL7505
XMPREQ
XINTM
XINTP
G IIC CLK A
G IIC DATA A
R7550 22K
R7551 100
R7552 100
R7553 100
C7535 0.1
R7548 4700
R7549 4700
TL7508
TL7506
TL7507
R7543 100
R7544 100
IC7503 C3EBJC000055 (EEPROM)
C7531 10P
C7532 10P
K7512 0
K7503 0
AV2 BLANKING
QR7503 UNR521400L (SWITCH)
EH50EB/EG,EH52EG
X SW 12.4V
TO FAN MOTOR P7504
FANDCOUT
GND
FAN LOCK
FAN MOTOR
FAN GND
Q7511 B1ABMD000004 (FAN MOTOR DRIVE)
C7588 0.01
IC7507 C0ABBA000146 (FAN MOTOR DRIVE)
C7587 1
R7624 10K
R7627 30K
R7626 820
R7625 10K
C7590 0.1
IC7501 C2CBKH000136 (TIMER)
DIG S CLK
REMOTE CTL.
VSYNC
FL TXD
FL RXD
FL CLK
BYTE
CNVSS
XCIN
XCOUT
RESET (L)
XOUT
VSS
XIN
VCC
XNMI
XMPREQ
XINTM
XINTM OUT
XINTP OUT
125Hz
NET P ON (H)
FAN PWM OUT
AV2 BLANK1
XSH RES
NET HIFRDY
FAN PWM OUT2
IIC CLK
IIC DATA
DIG S OUT
TEST3
VSS3
CVIN1
VDD3
VSS1
SVREF
SYNCIN
START
DIG S IN
AVCC
VREF
KEYIN3
AVSS
KEYIN2
KEYIN1
AV2-8
AFC
DC R CH
DC L CH
DIG S CS
AV3 SIN (L)
FL CS (L)
FL RESET (L)
LED9
LED8
LED7
LED6
SD SEL LED (H)
VSS2
LP2FSC
LP3FSC
LP4FSC
VDD2
TEST1
M1
SLICEON OUT
UARTP2G
UARTG2P
NET BUS REQ
NET STATUS
TBUS TXD
TBUS RXD
TBUS CLK
EPG ON (H)
NET HIFEBL
HDD PFAIL (L)
P SAVE (L)
DR P ON (H)
JC P ON (H)
DI P ON (H)
FAN LOCK (H)
XCE
V SYNC DET
AV4 SIN (L)
FAN LOCK2
NC
DVD SEL LED (H)
HDD SEL LED (H)
SD LED (H)
LED1
P50OUT
P50INT
SYS PFAIL (H)
PFAIL (L)
FILAMENT ON (L)
P SAVE (H)
EEPROM W/C
NC
RFC A MUTE (H)
P50 THROUGH (H)
SW2
TEST2 (H)
VSS
NC
VCC
NC
NC
NC
NC
EPG MUTE (L)
XTMUTE
NC
NC
AV2 PB (L)
WIDE (H)
C7555 0.01
C7554 0.01
R7654 100
EH50EB
R7653 100
R7582 100K
TL7512
C7551 0.1
C7550 6V47
LB7510 J0JGC0000020
R7652 100
K7504 0
R7628 22K
R7649 100
R7563 100
R7560 4700
TL7509
C7546 1
C7534 0.01
C7533 6V47
R7539 47P
R7540 0.01
R7557 510
R7541 47P
R7558 2K
R7542 0.1
R7559 2K
R7543 47P
R7544 0.1
R7570 3900
R7575 100
R7576 1K
R7574 22K
C7547 1
LB7509 J0JCC0000060
R7577 10K
X SW+12.4V
M:Main Net Section(Page: A)
AI:A/V I/O Section(Page: B)
T:Timer Section(Page: C)
DMR-EH50EB/EG/EP,EH52EG
Timer Section(Main P.C.B.(3/3)) Schematic Diagram(T)



DMR-EH50EB/EG/EP,EH52EG
Timer Section(Main P.C.B.(3/3)) Schematic Diagram(T)

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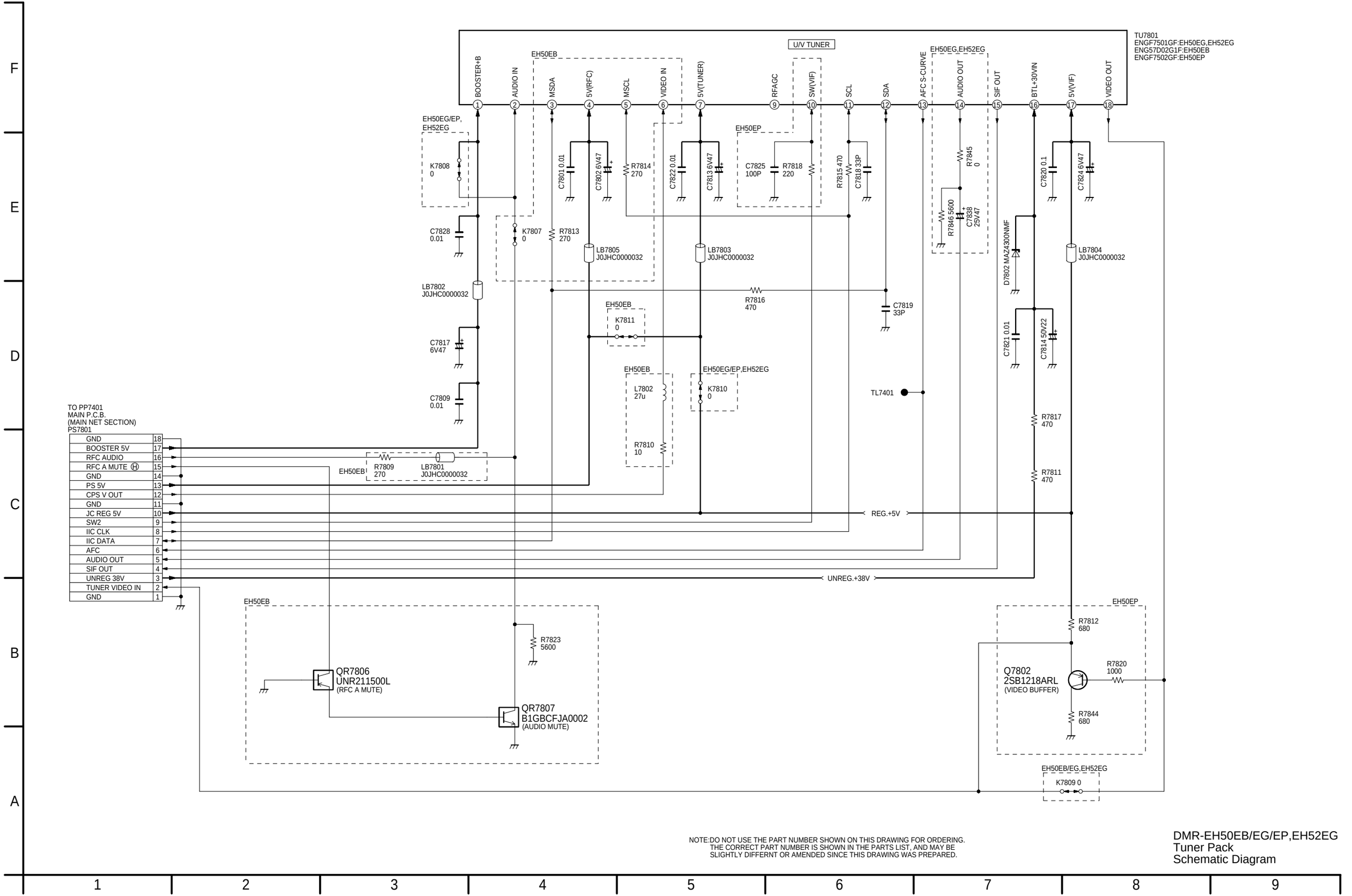
DMR-EH50EB/EG/EP,EH52EG
Timer Section(Main P.C.B.(3/3)) Schematic Diagram(T)



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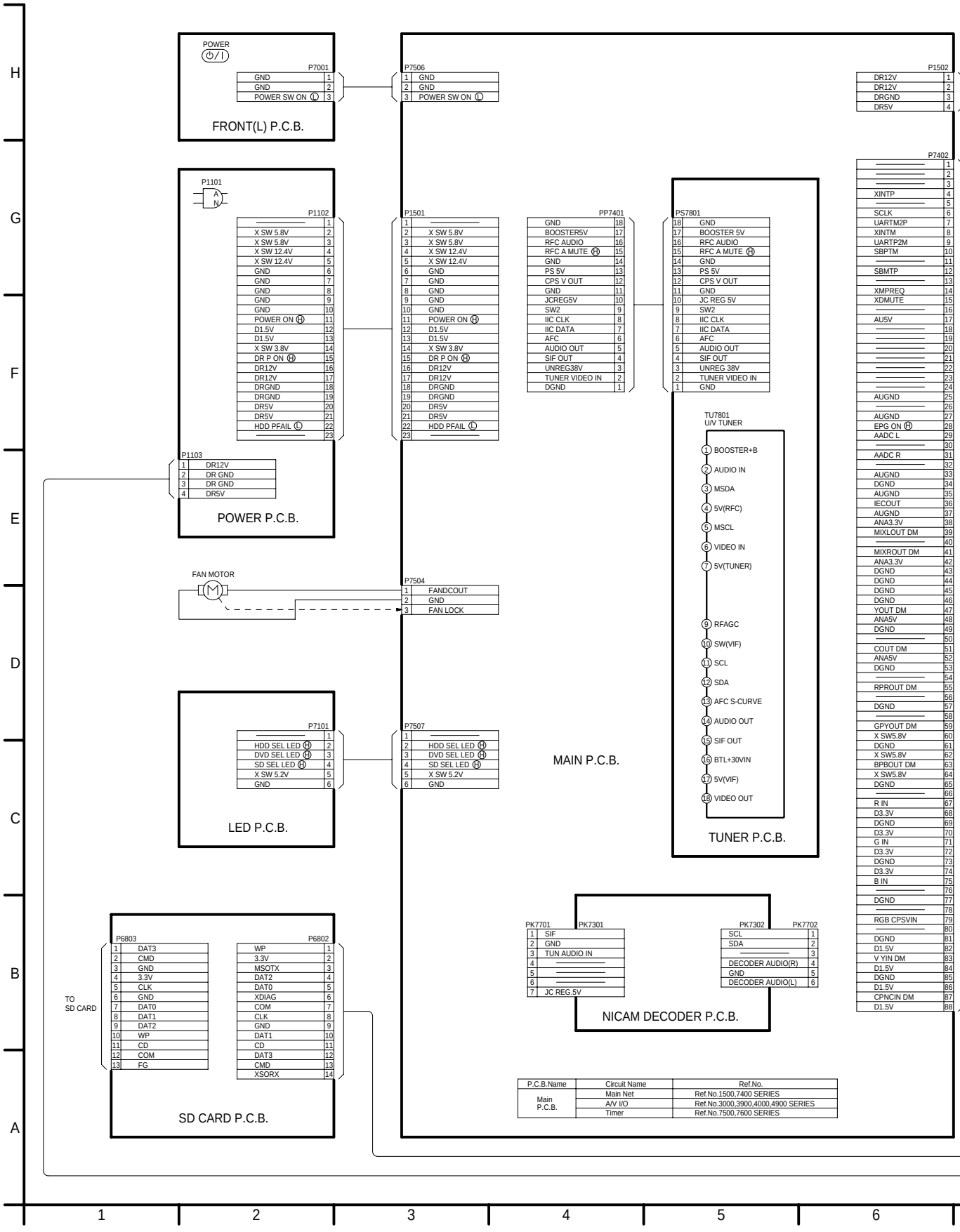
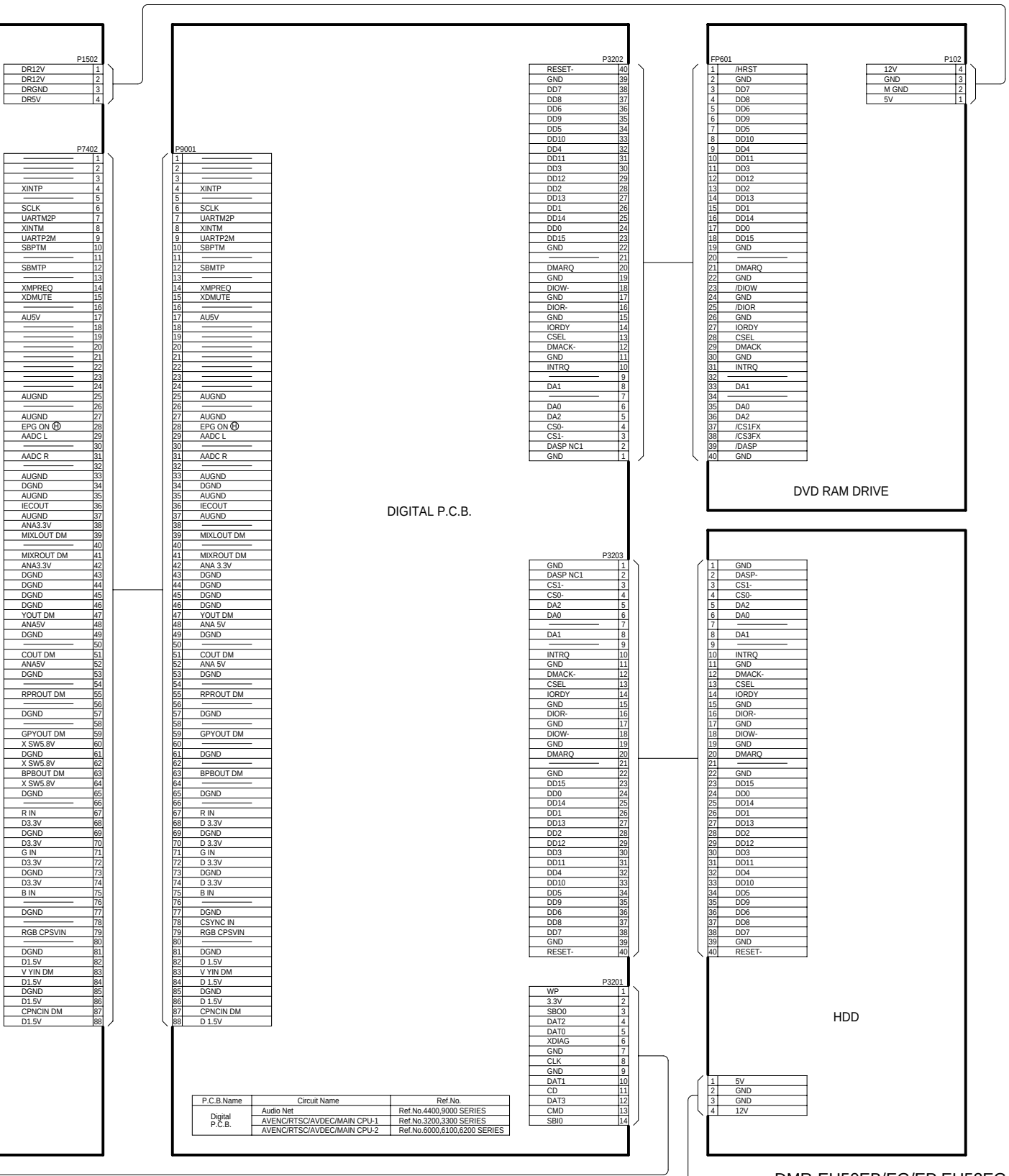
DMR-EH50EB/EG/EP,EH52EG
Tuner Pack
Schematic Diagram

18 Schematic Diagram

18.1. Interconnection Schematic Diagram



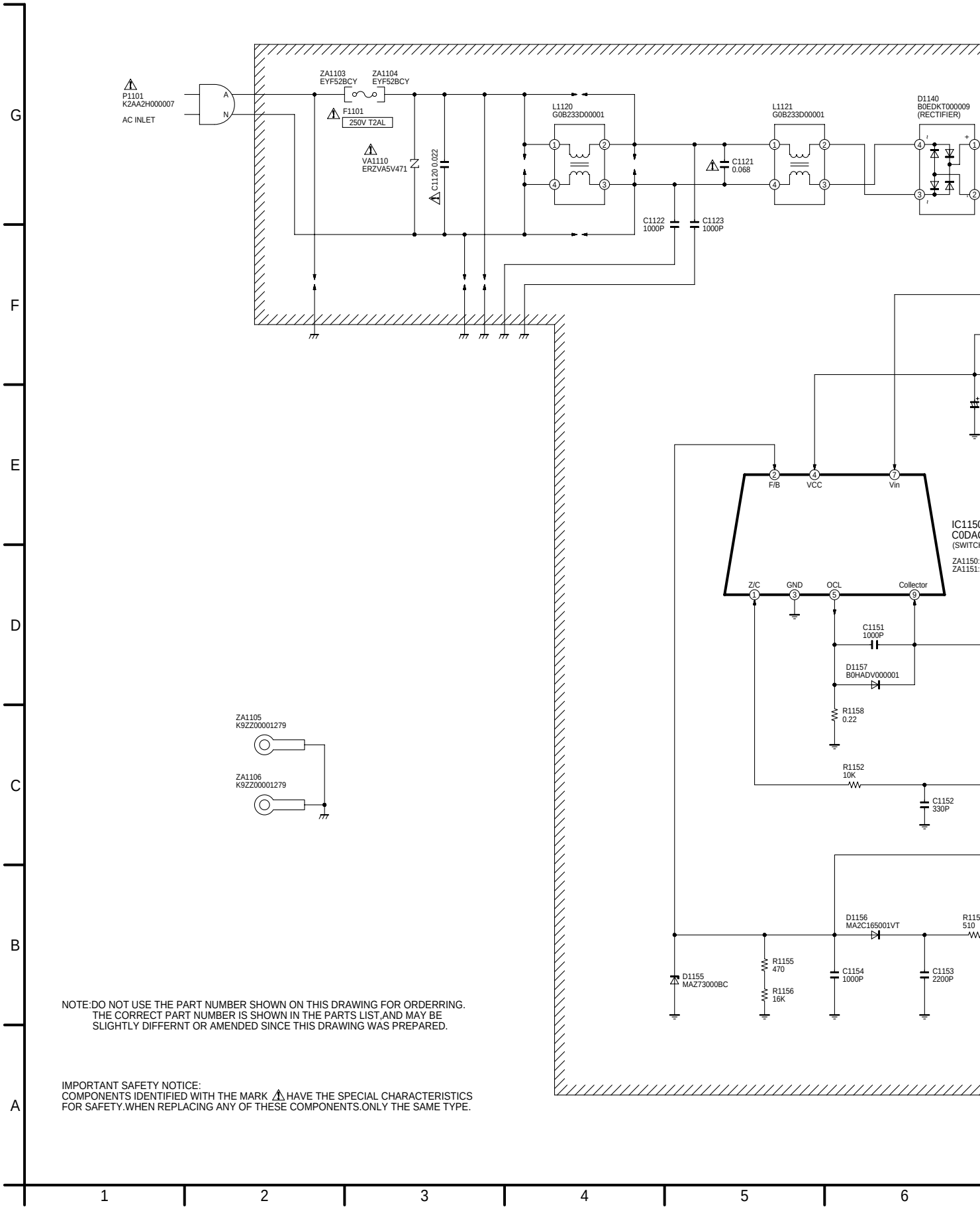


P.C.B.Name	Circuit Name	Ref.No.
Digital P.C.B.	Audio Net	Ref.No.4400,9000 SERIES
	AVENC/RTSC/AVDEC/MAIN CPU-1	Ref.No.3200,3300 SERIES
	AVENC/RTSC/AVDEC/MAIN CPU-2	Ref.No.6000,6100,6200 SERIES

DMR-EH50EB/EG/EP,EH52EG
Interconnection
Schematic Diagram

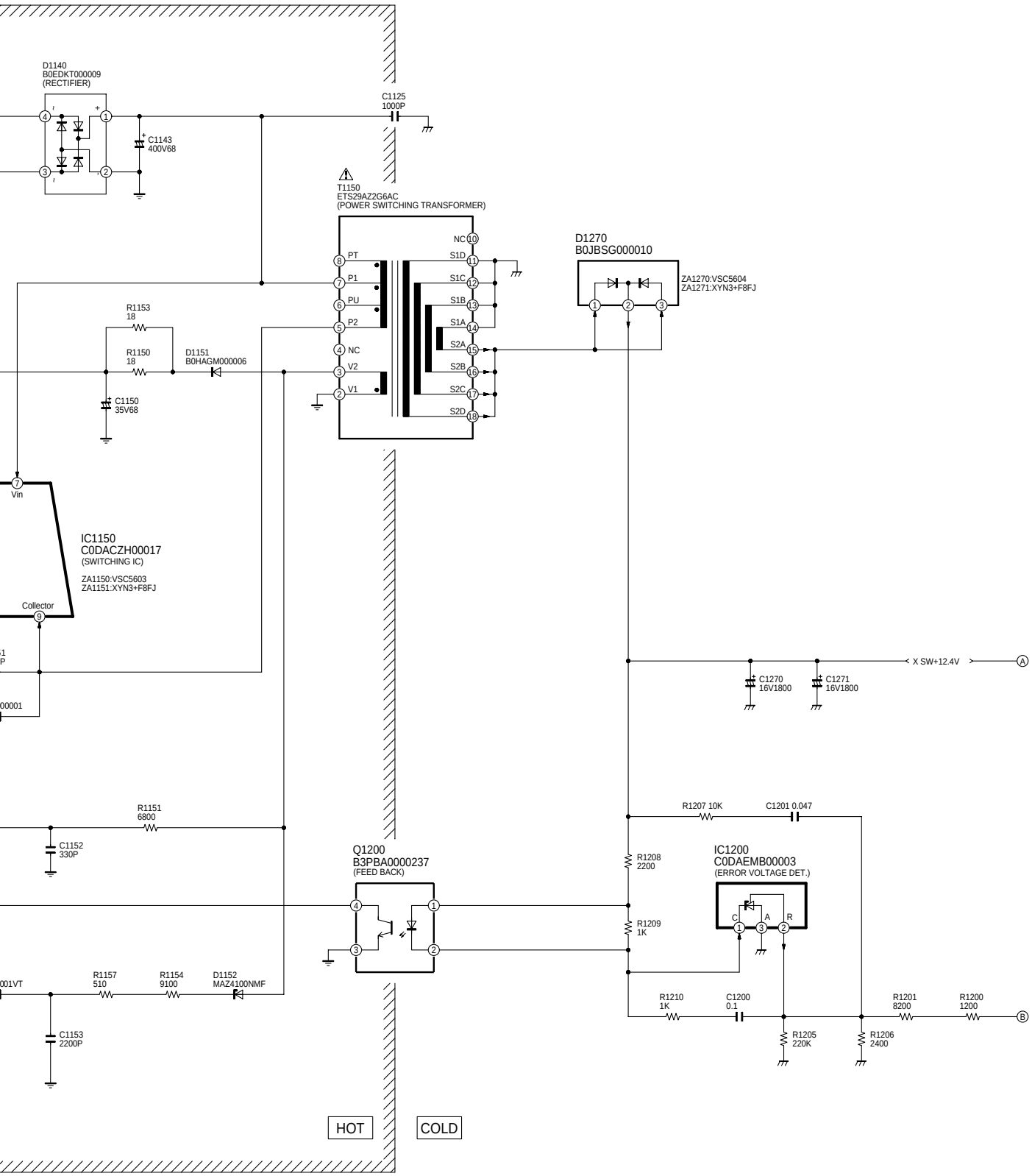
6 | 7 | 8 | 9 | 10 | 11 | 12

18.2. Power Supply Schematic Diagram



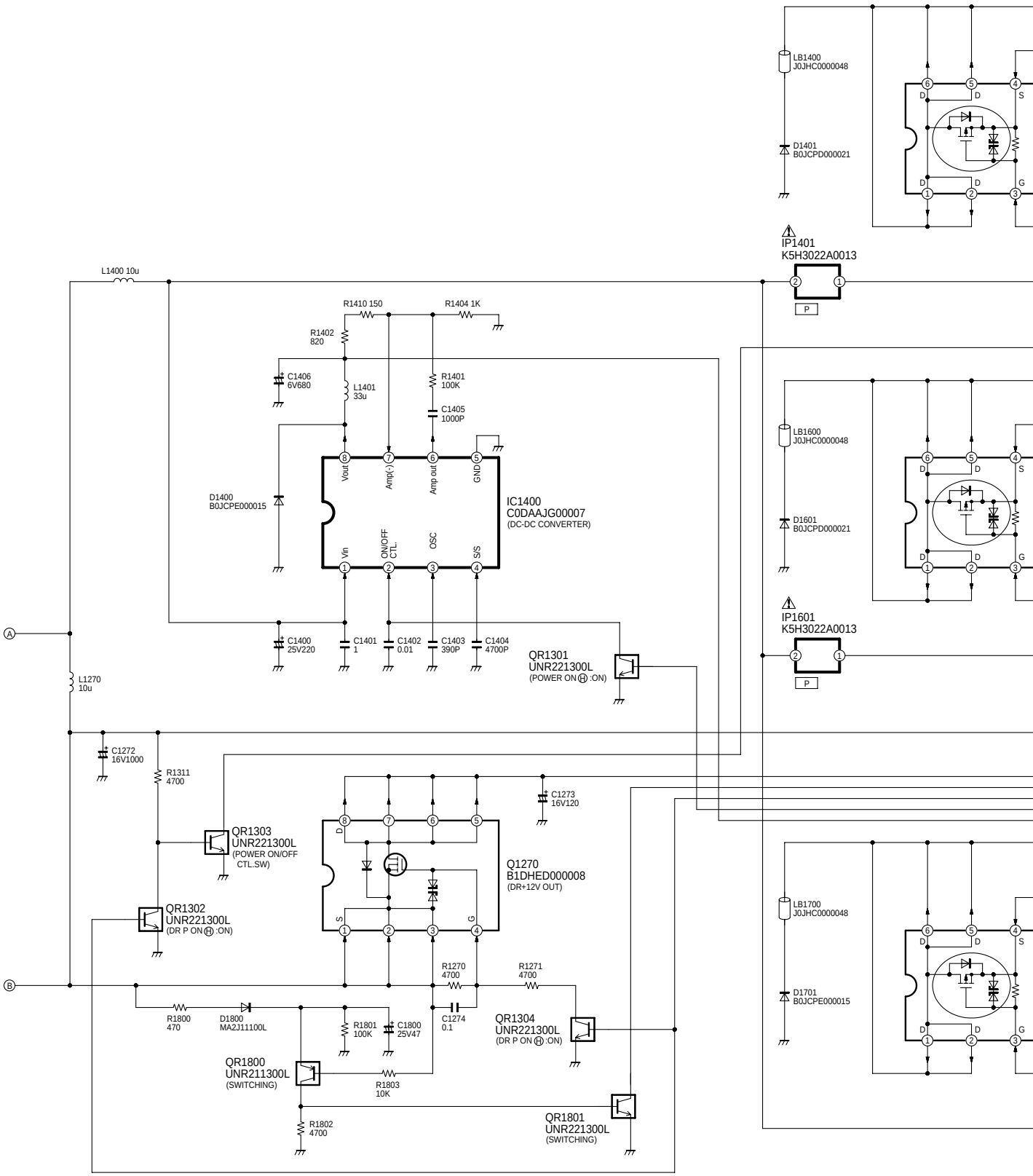
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERRING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE
SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS
FOR SAFETY.WHEN REPLACING ANY OF THESE COMPONENTS.ONLY THE SAME TYPE.

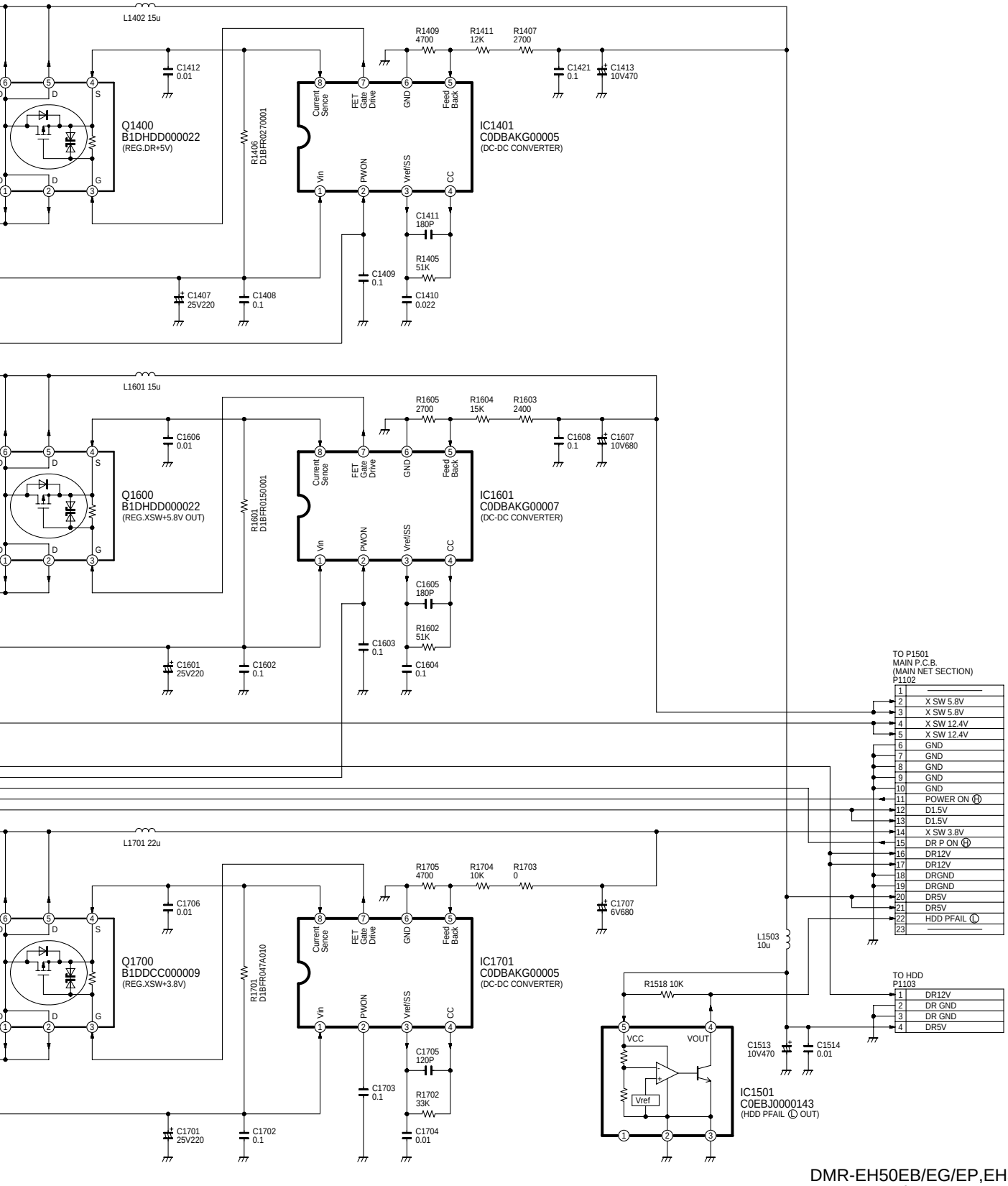


DMR-EH50EB/EG/EP,EH52EG
Power Supply
Schematic Diagram

6 | 7 | 8 | 9 | 10 | 11



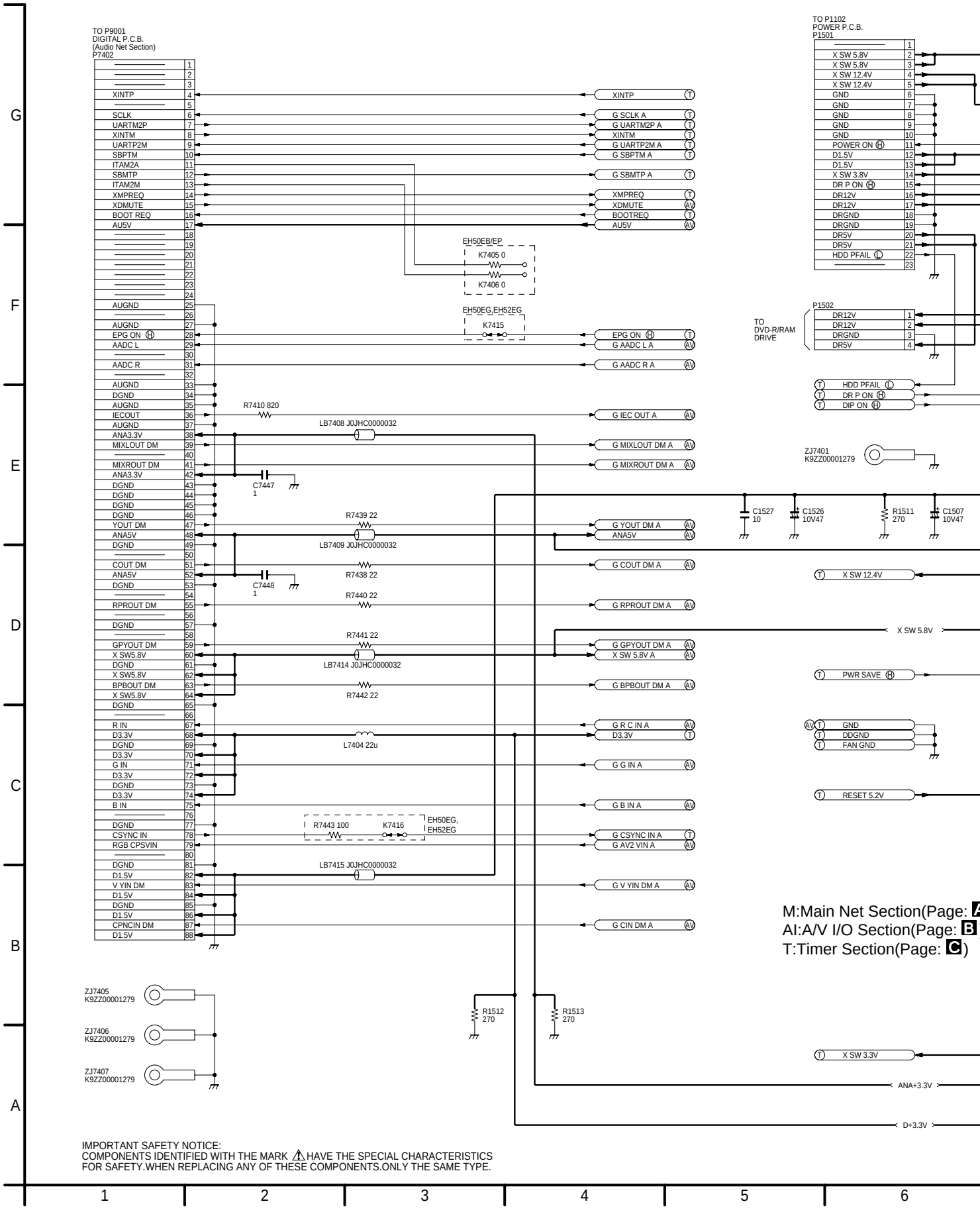
DMR-EH50EB/EG/EP,EH52EG
Power Supply
Schematic Diagram

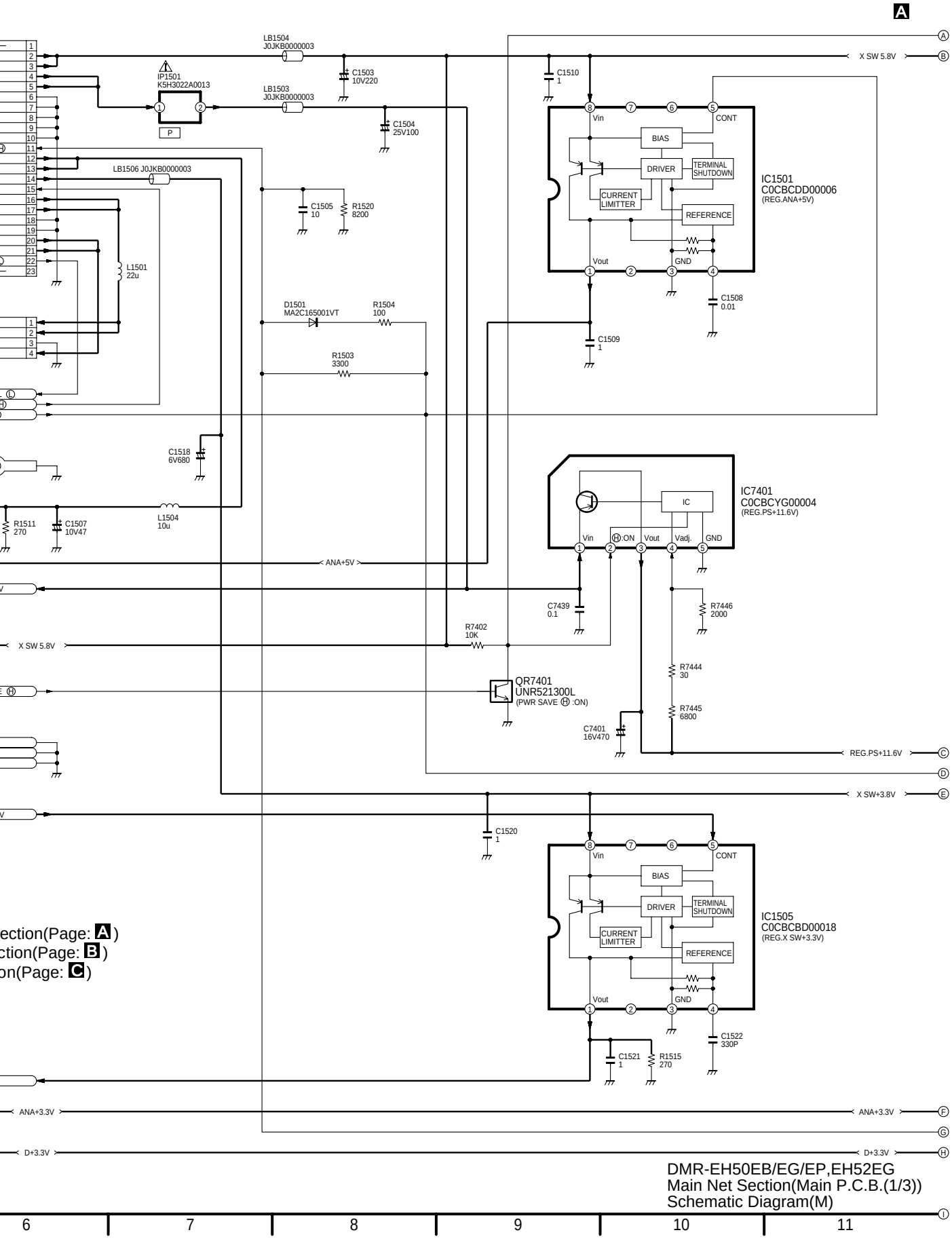


DMR-EH50EB/EG/EP,EH52EG
Power Supply
Schematic Diagram

17	18	19	20	21	22

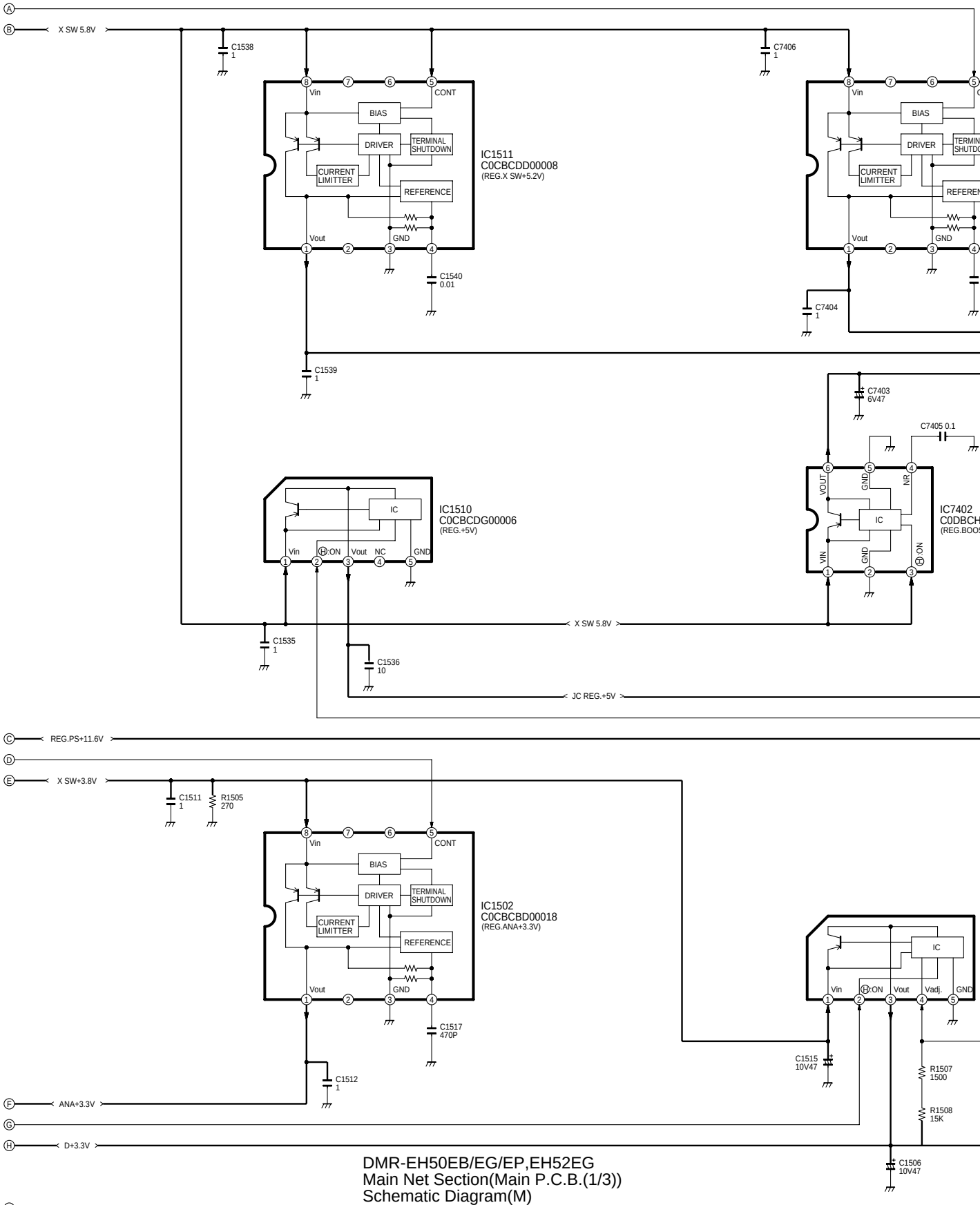
18.3. Main Net Section (Main P.C.B. (1/3)) Schematic Diagram (M)





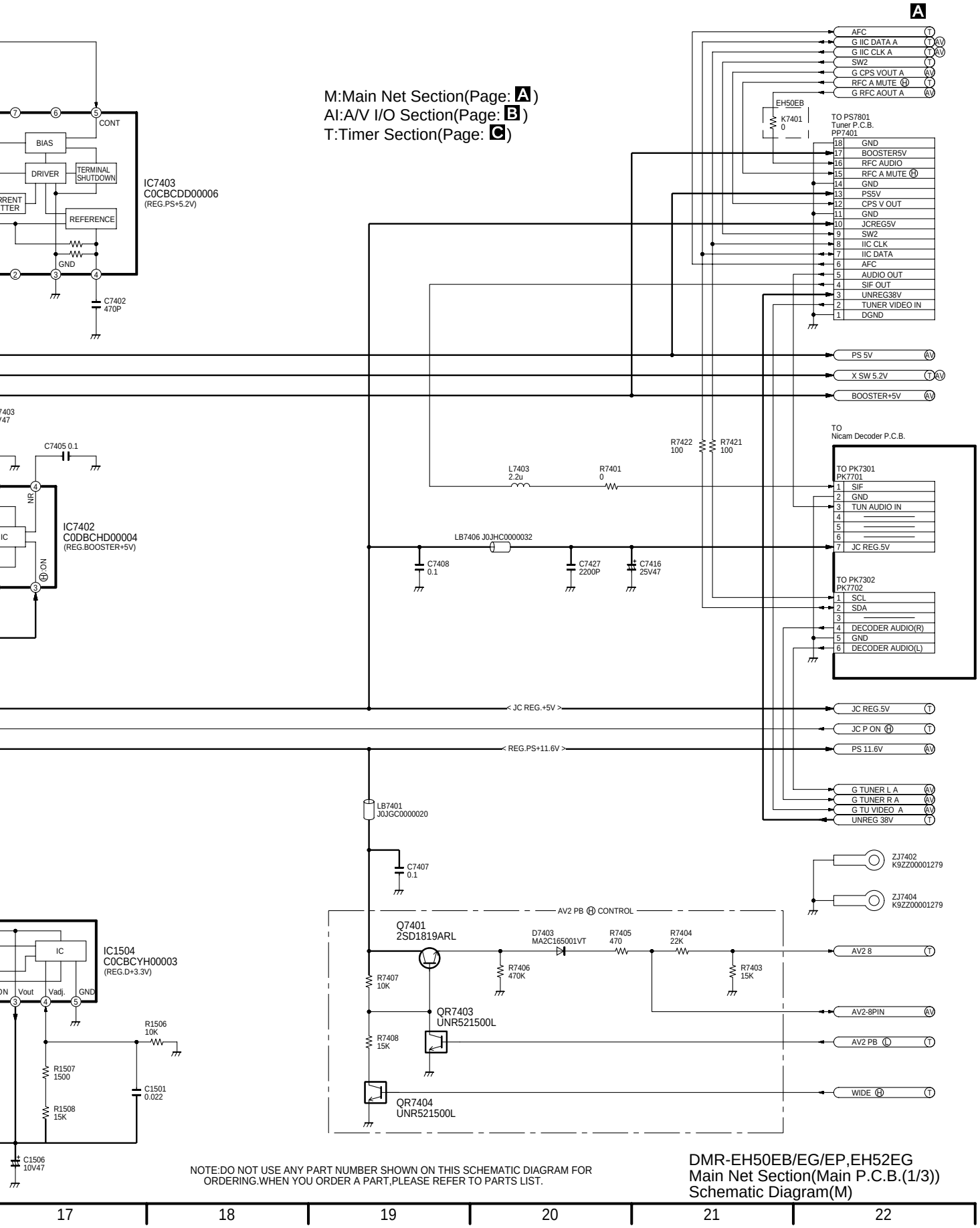
DMR-EH50EB/EG/EP,EH52EG
Main Net Section(Main P.C.B.(1/3))
Schematic Diagram(M)

6 | 7 | 8 | 9 | 10 | 11



DMR-EH50EB/EG/EP,EH52EG
Main Net Section(Main P.C.B.(1/3))
Schematic Diagram(M)

M:Main Net Section(Page: A)
AI:A/V I/O Section(Page: B)
T:Timer Section(Page: C)

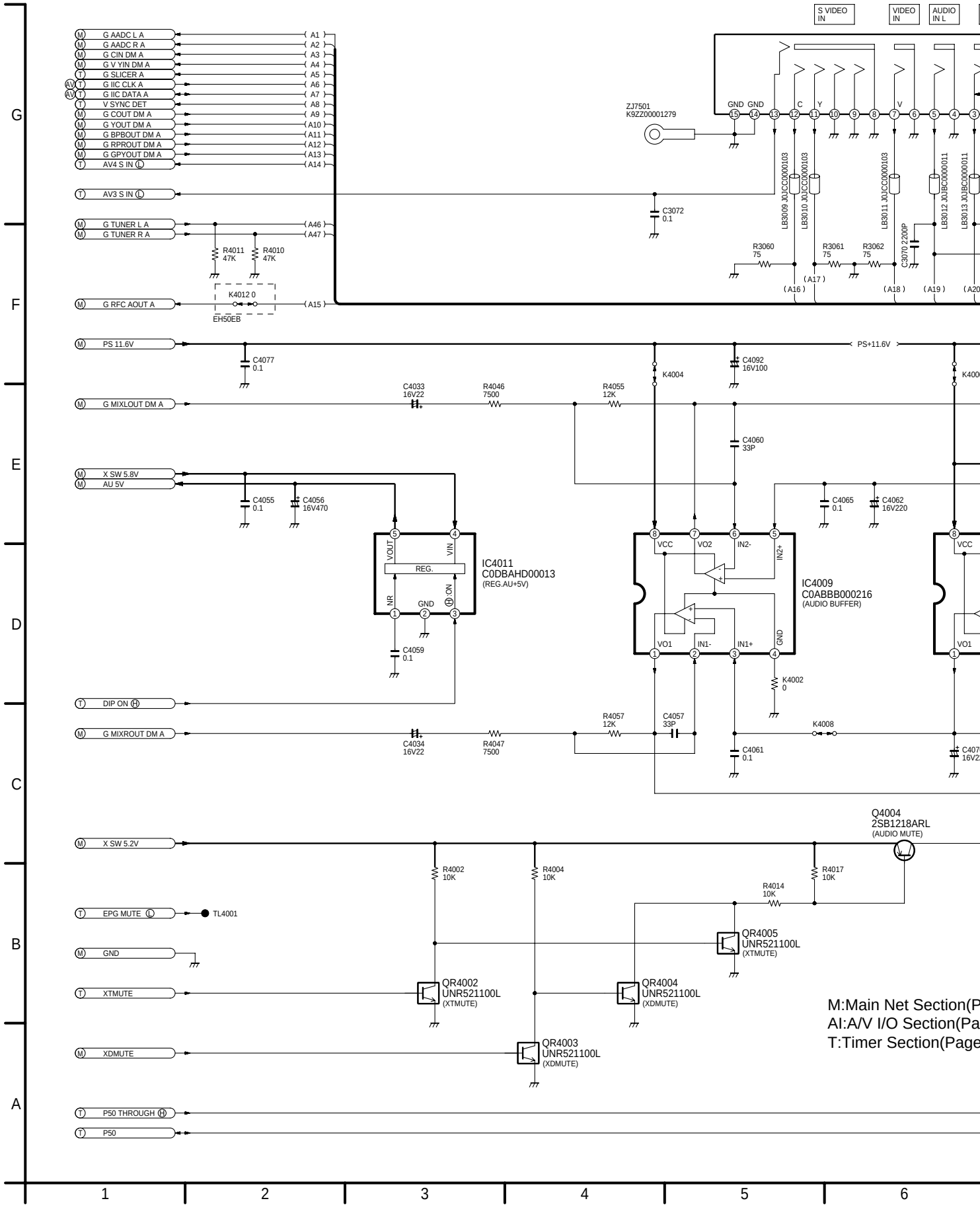


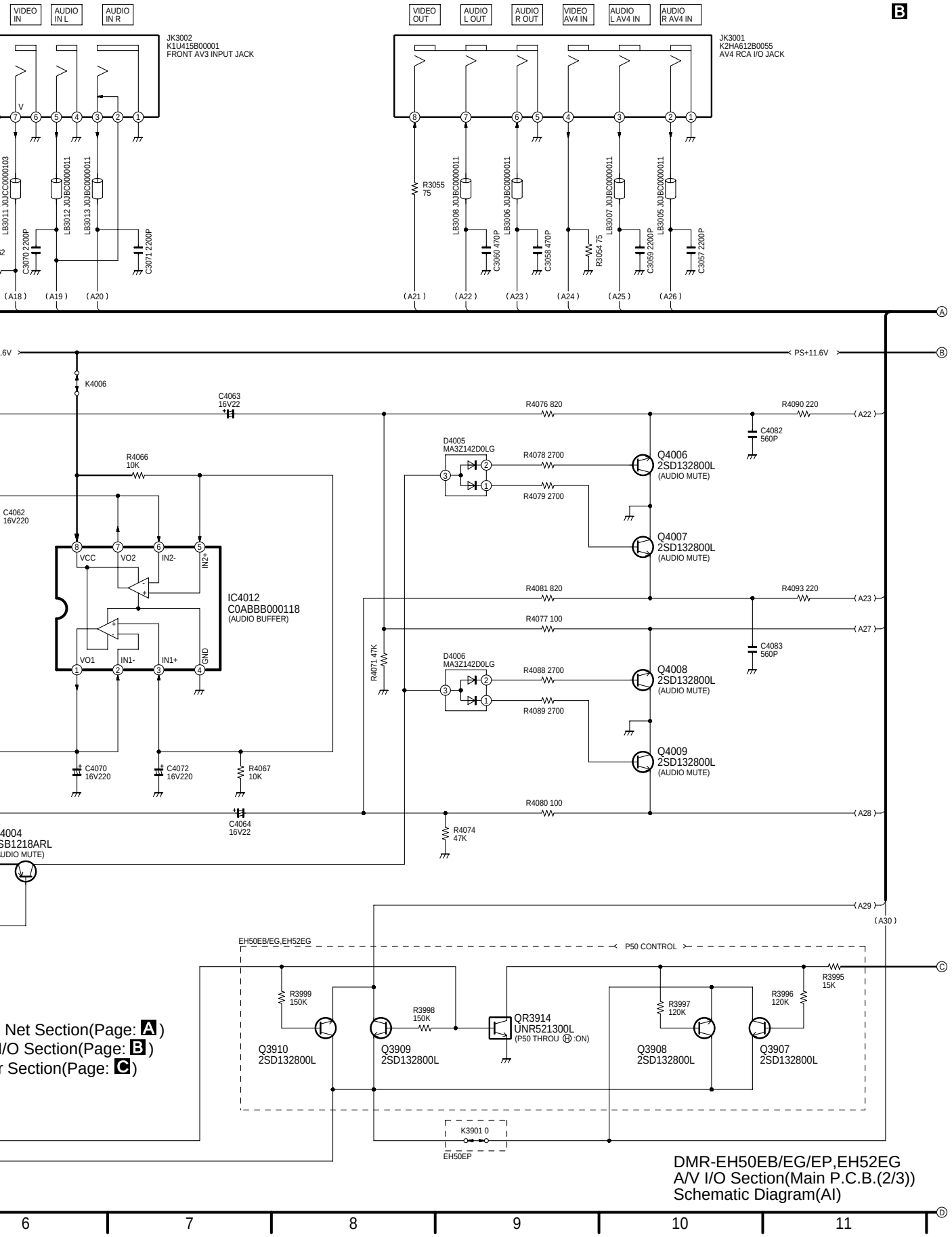
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH50EB/EG/EP,EH52EG
Main Net Section(Main P.C.B.(1/3))
Schematic Diagram(M)

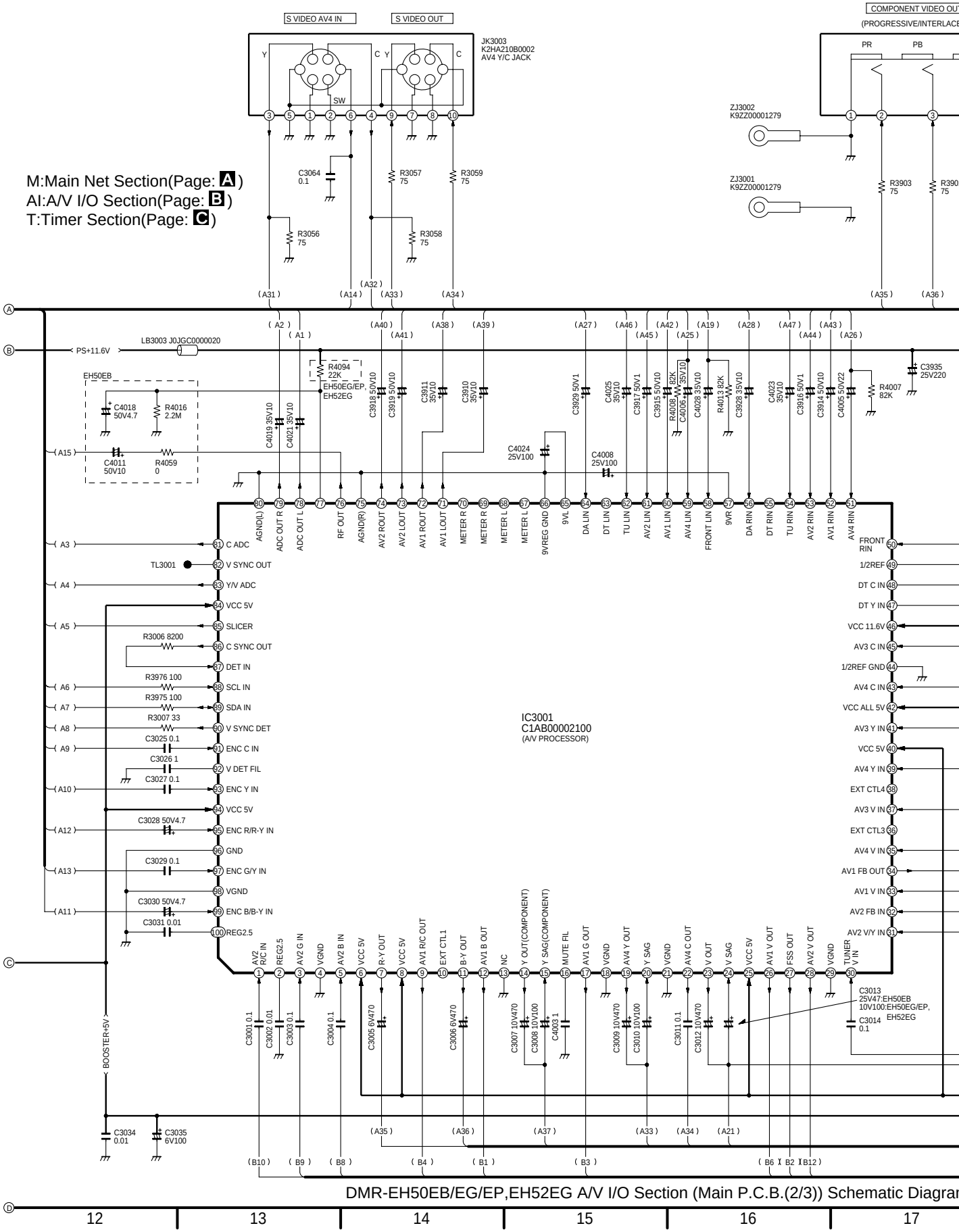
17	18	19	20	21	22

18.4. A/V I/O Section (Main P.C.B. (2/3)) Schematic Diagram (AI)

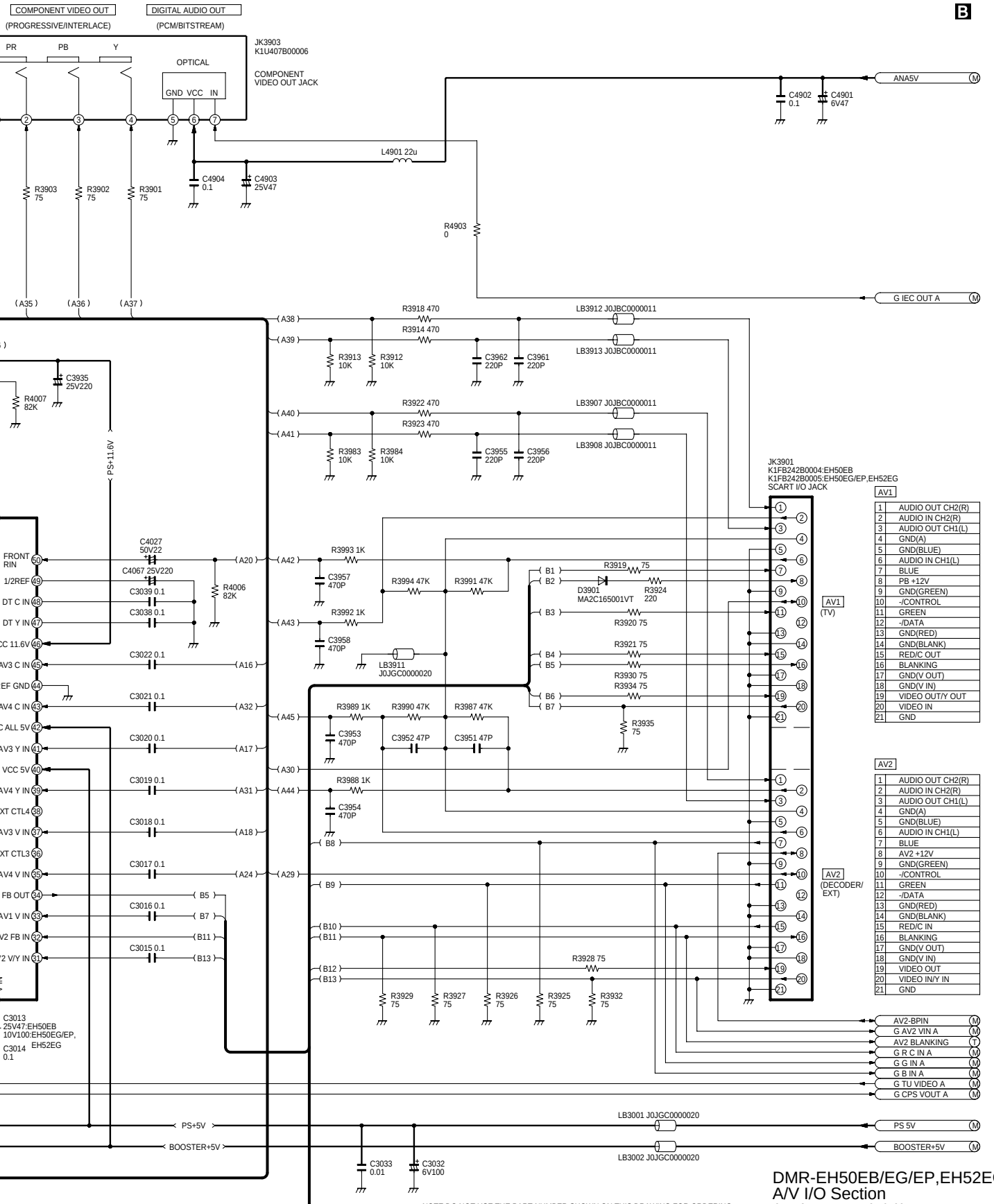



B
VIDEO IN
AUDIO IN L
AUDIO IN R
JK3002
K1U415B00001
FRONT AV3 INPUT JACK
VIDEO OUT
AUDIO L OUT
AUDIO R OUT
VIDEO AV4 IN
AUDIO L AV4 IN
AUDIO R AV4 IN
JK3001
K2HA612B0055
AV4 RCA I/O JACK
R3055 75
LB3008 J0JBC0000011
LB3006 J0JBC0000011
LB3007 J0JBC0000011
LB3005 J0JBC0000011
C3060 470P
C3058 470P
R3054 75
C3059 2200P
C3057 2200P
LB3011 J0JCC0000103
LB3012 J0JBC0000011
LB3013 J0JBC0000011
C3070 2200P
C3071 2200P
(A18)
(A19)
(A20)
(A21)
(A22)
(A23)
(A24)
(A25)
(A26)
PS+11.6V
K4006
C4063 16V22
R4076 820
R4090 220
C4082 560P
D4005 MA3Z142D0LG
R4078 2700
R4079 2700
Q4006 2SD132800L (AUDIO MUTE)
Q4007 2SD132800L (AUDIO MUTE)
R4066 10K
C4062 16V220
IC4012 C0ABBB000118 (AUDIO BUFFER)
VCC
VO2
IN2-
IN2+
VO1
IN1-
IN1+
GND
R4081 820
R4093 220
R4077 100
C4083 560P
R4071 47K
D4006 MA3Z142D0LG
R4088 2700
R4089 2700
Q4008 2SD132800L (AUDIO MUTE)
Q4009 2SD132800L (AUDIO MUTE)
C4070 16V220
C4072 16V220
R4067 10K
C4064 16V22
R4080 100
R4074 47K
(A27)
(A28)
(A29)
(A30)
EH50EB/EG,EH52EG
P50 CONTROL
R3995 15K
R3999 150K
R3998 150K
QR3914 UNR521300L (P50 THROU H:ON)
R3997 120K
R3996 120K
Q3910 2SD132800L
Q3909 2SD132800L
Q3908 2SD132800L
Q3907 2SD132800L
K3901 0
EH50EP
Net Section(Page: A)
I/O Section(Page: B)
r Section(Page: C)
DMR-EH50EB/EG/EP,EH52EG
A/V I/O Section(Main P.C.B.(2/3))
Schematic Diagram(AI)
6
7
8
9
10
11

M:Main Net Section(Page: A)
AI:A/V I/O Section(Page: B)
T:Timer Section(Page: C)



DMR-EH50EB/EG/EP,EH52EG A/V I/O Section (Main P.C.B.(2/3)) Schematic Diagram



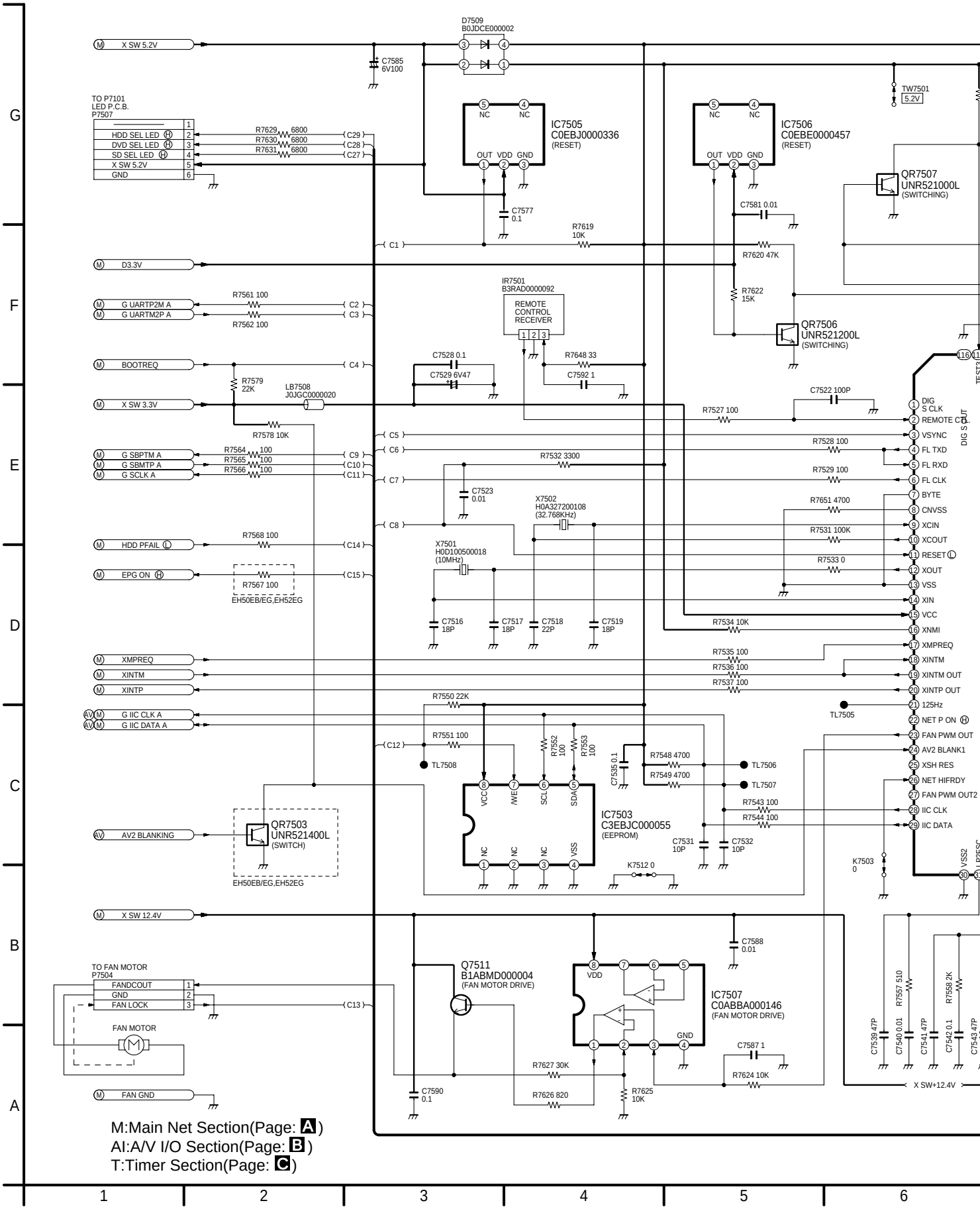
NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

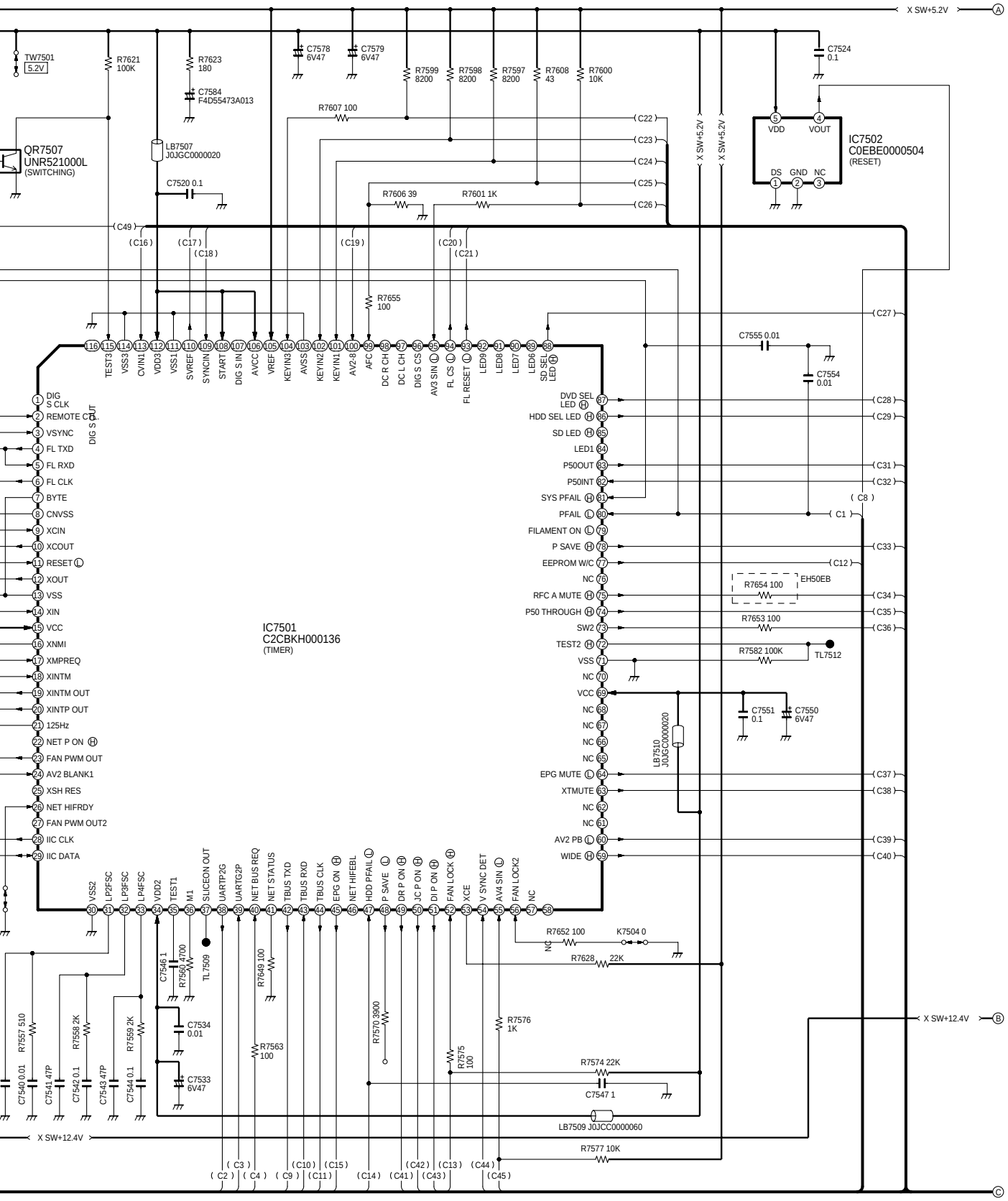
DMR-EH50EB/EG/EP,EH52EG
A/V I/O Section
(Main P.C.B.(2/3))
Schematic Diagram(AI)

ematic Diagram(AI)

17 | 18 | 19 | 20 | 21 | 22

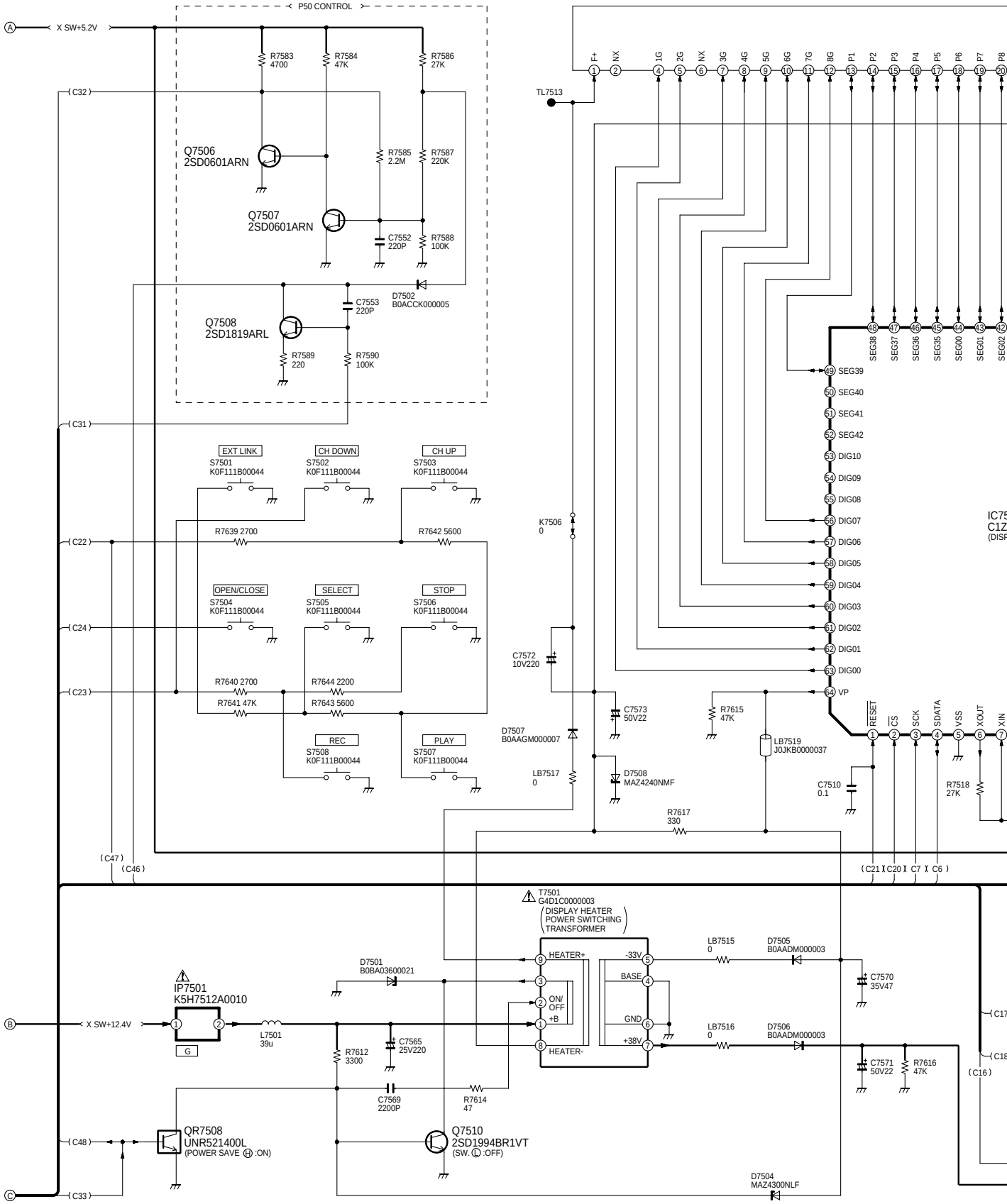
18.5. Timer Section (Main P.C.B. (3/3)) Schematic Diagram (T)





DMR-EH50EB/EG/EP,EH52EG
Timer Section(Main P.C.B.(3/3)) Schematic Diagram(T)

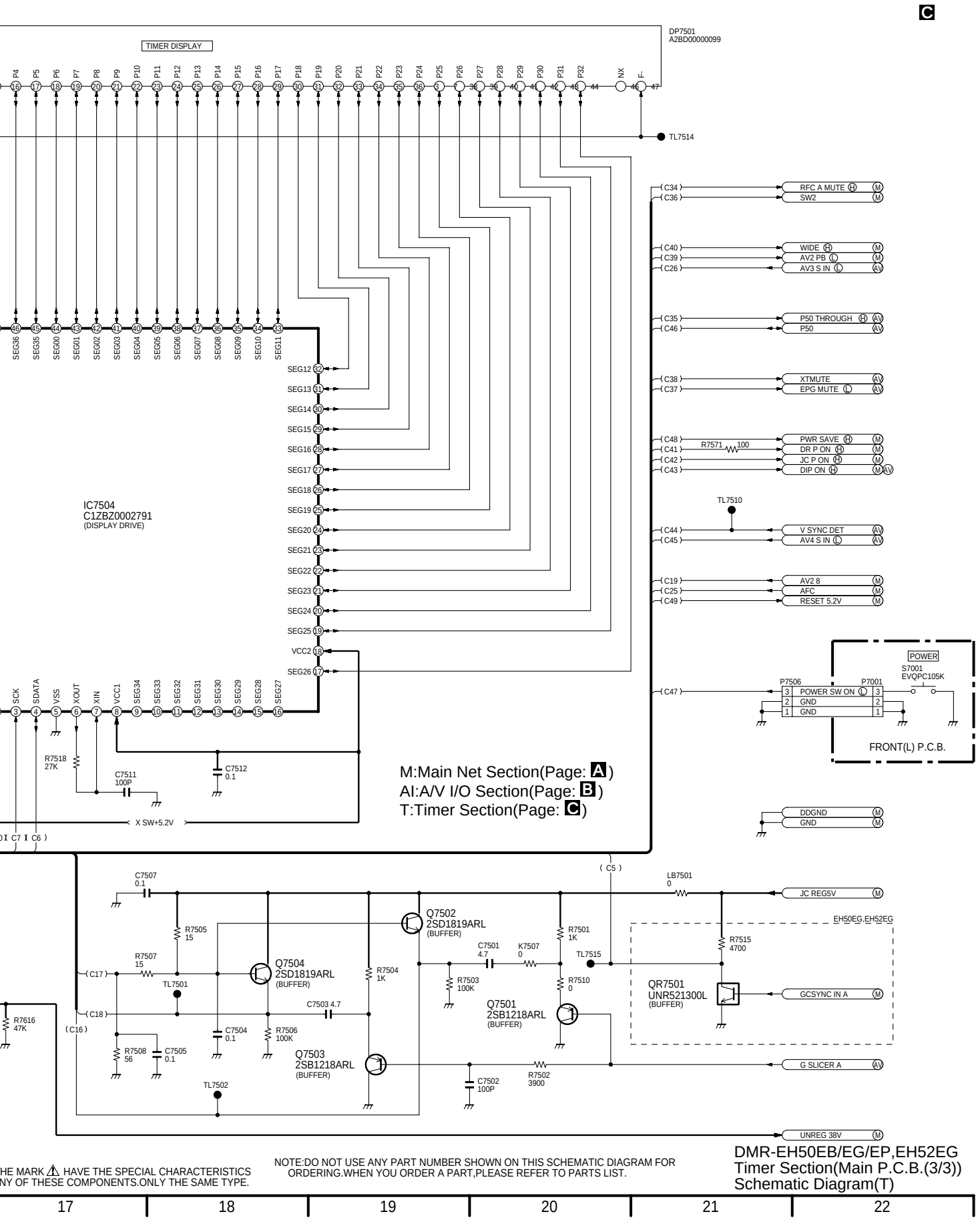
6 | 7 | 8 | 9 | 10 | 11



DMR-EH50EB/EG/EP,EH52EG
Timer Section(Main P.C.B.(3/3)) Schematic Diagram(T)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE TH
FOR SAFETY.WHEN REPLACING ANY OF THESE COMPO

12 13 14 15 16 17



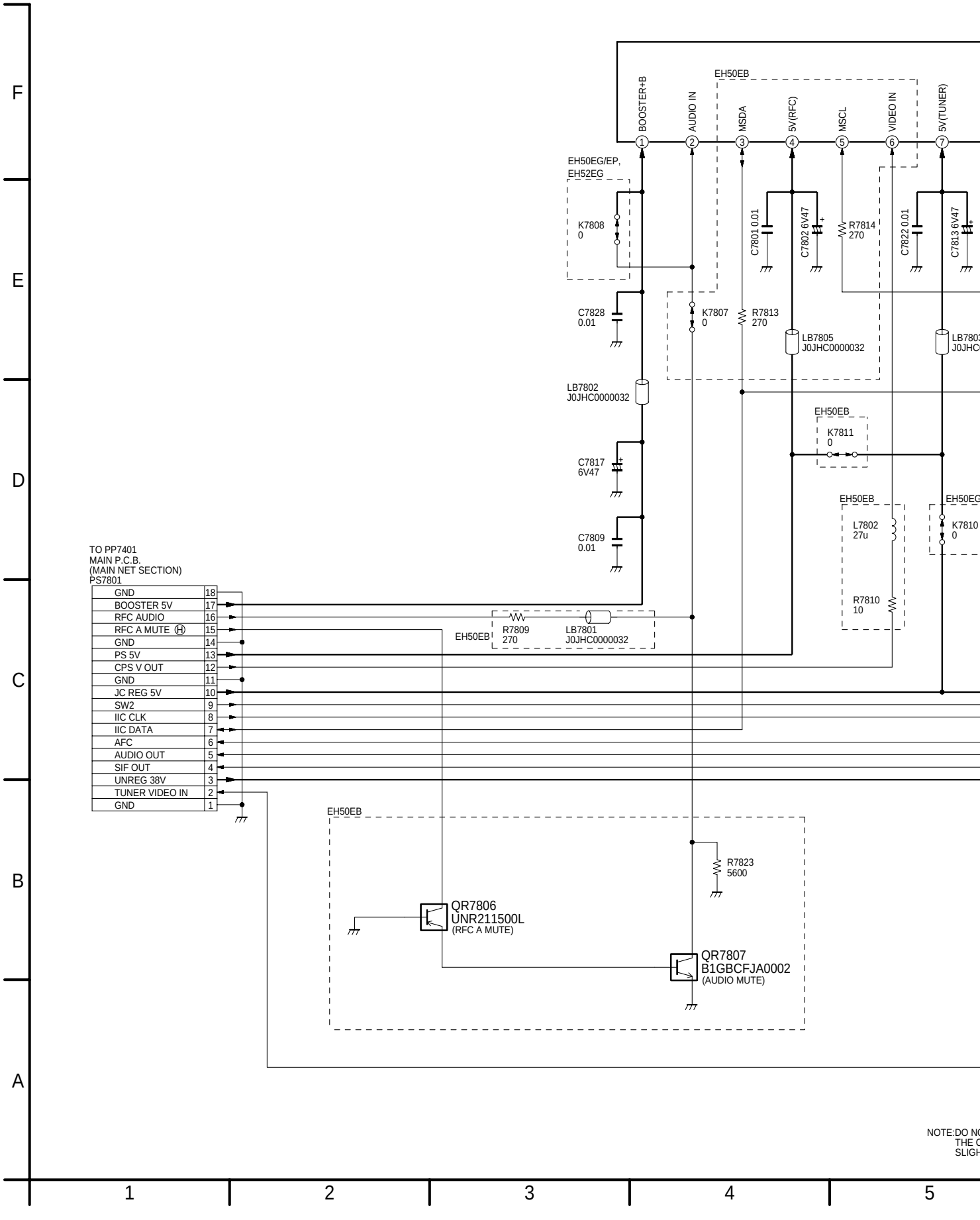
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

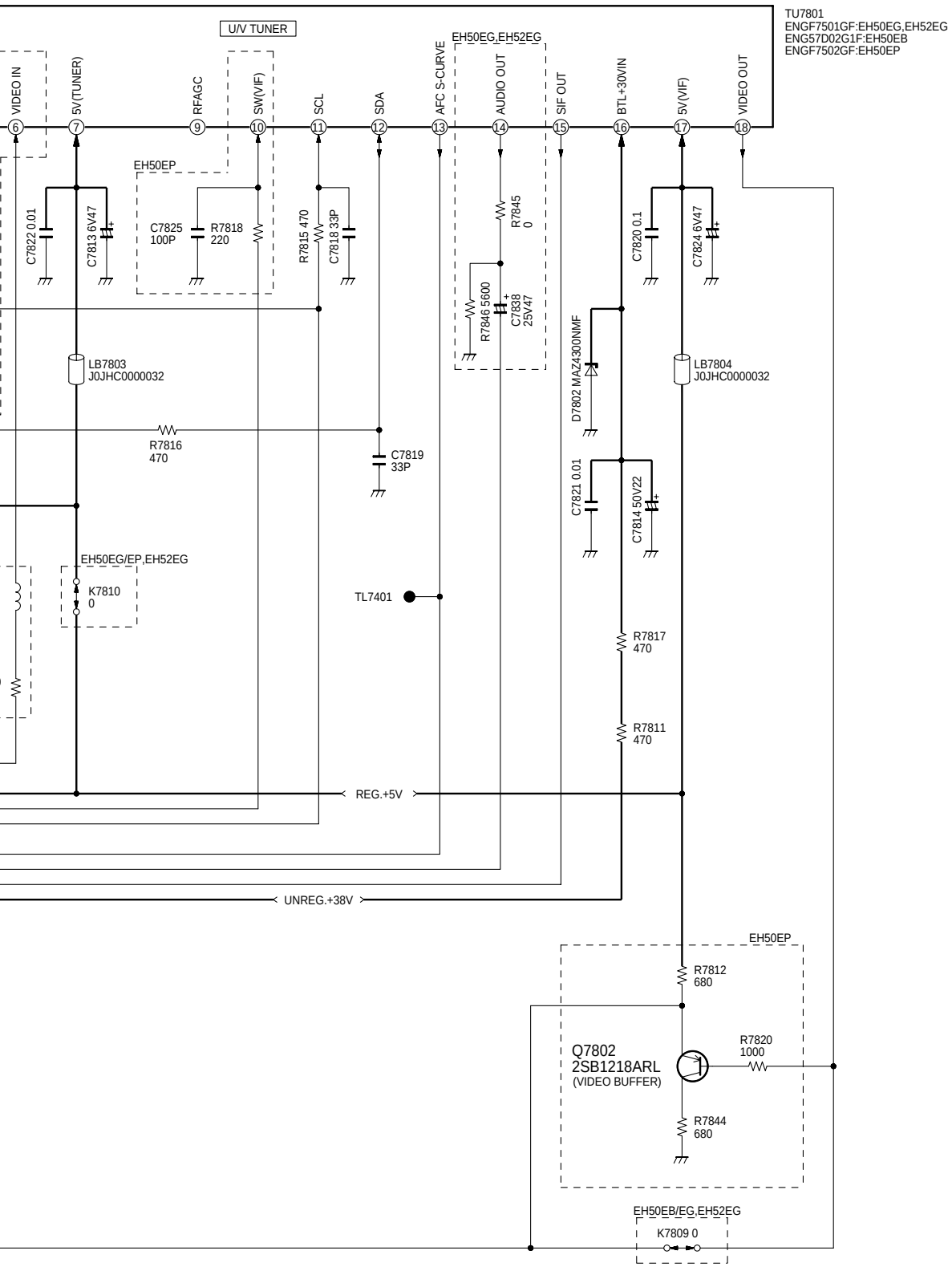
HE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS
NY OF THESE COMPONENTS.ONLY THE SAME TYPE.

DMR-EH50EB/EG/EP,EH52EG
Timer Section(Main P.C.B.(3/3))
Schematic Diagram(T)

17 | 18 | 19 | 20 | 21 | 22

18.6. Tuner Pack Schematic Diagram





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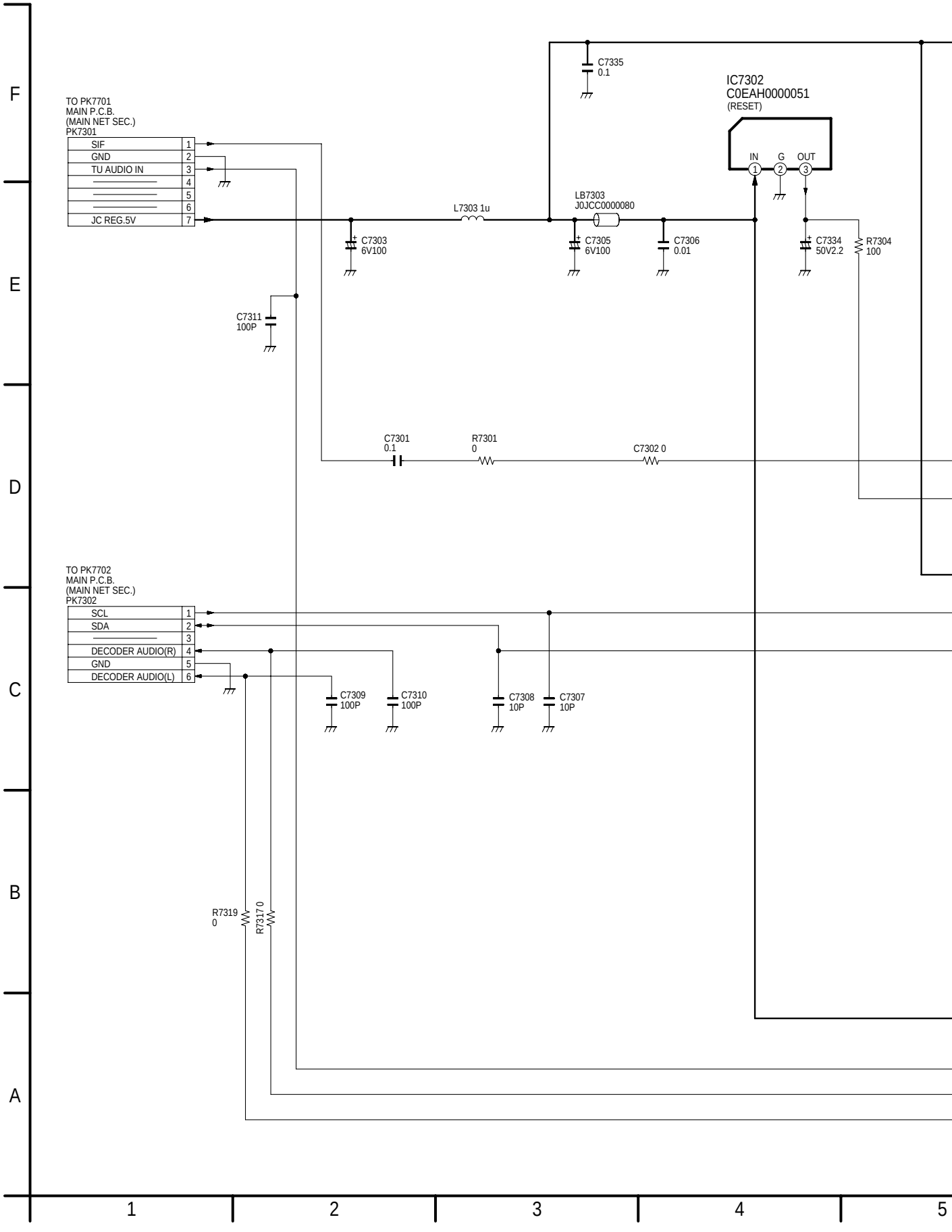
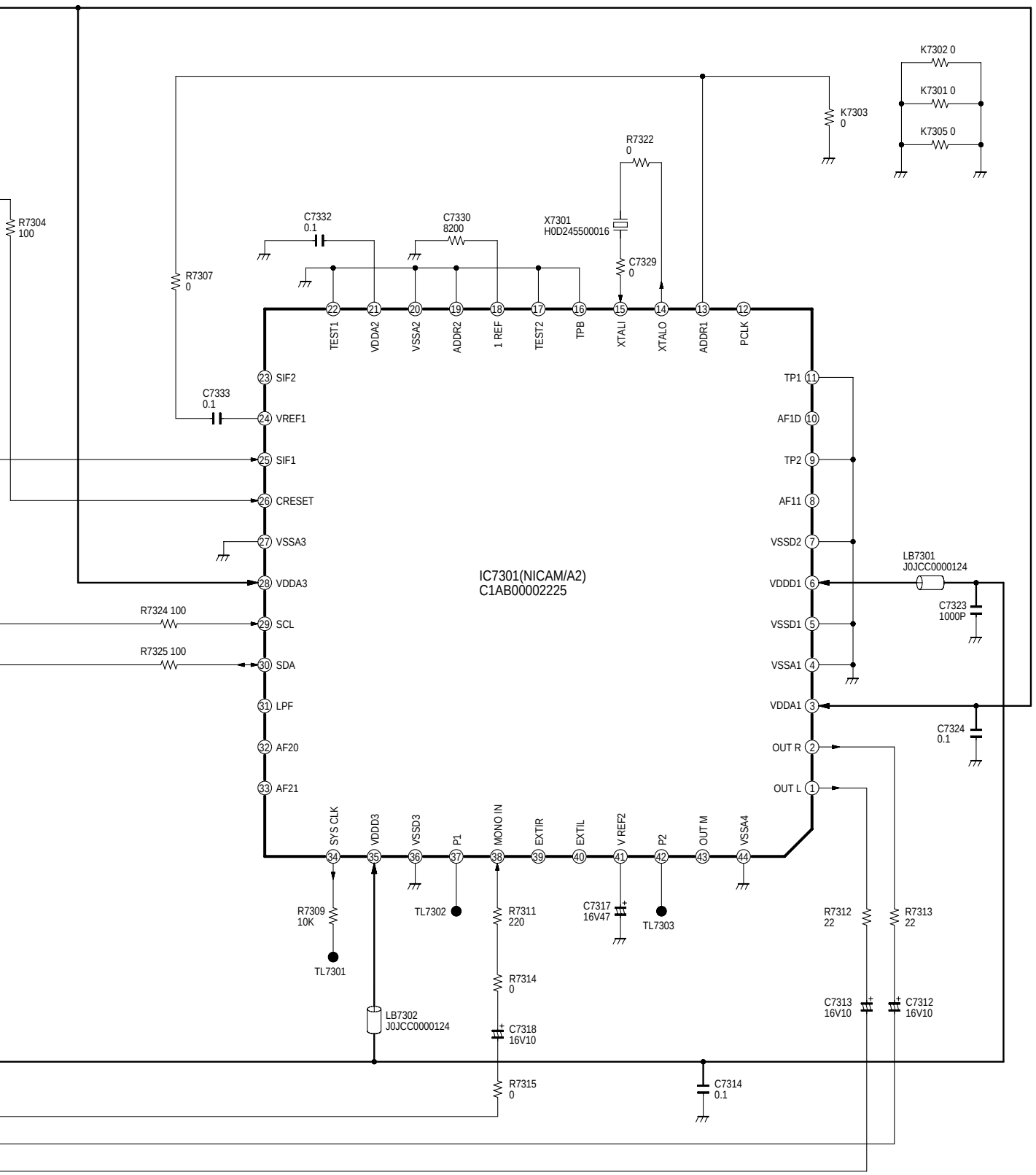
DMR-EH50EB/EG/EP,EH52EG
Tuner Pack
Schematic Diagram

5 | 6 | 7 | 8 | 9

18.7. Nicam Decoder Schematic Diagram



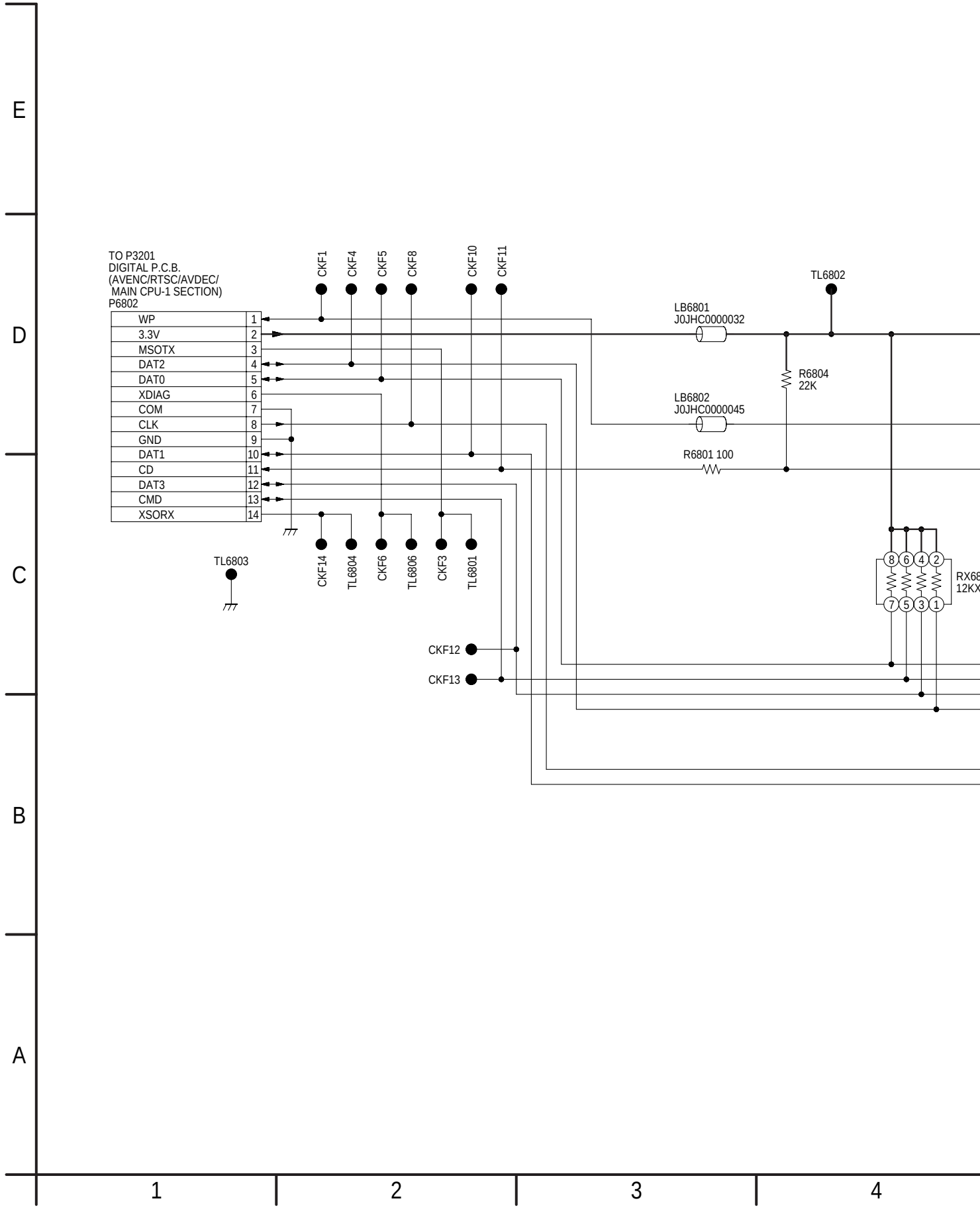


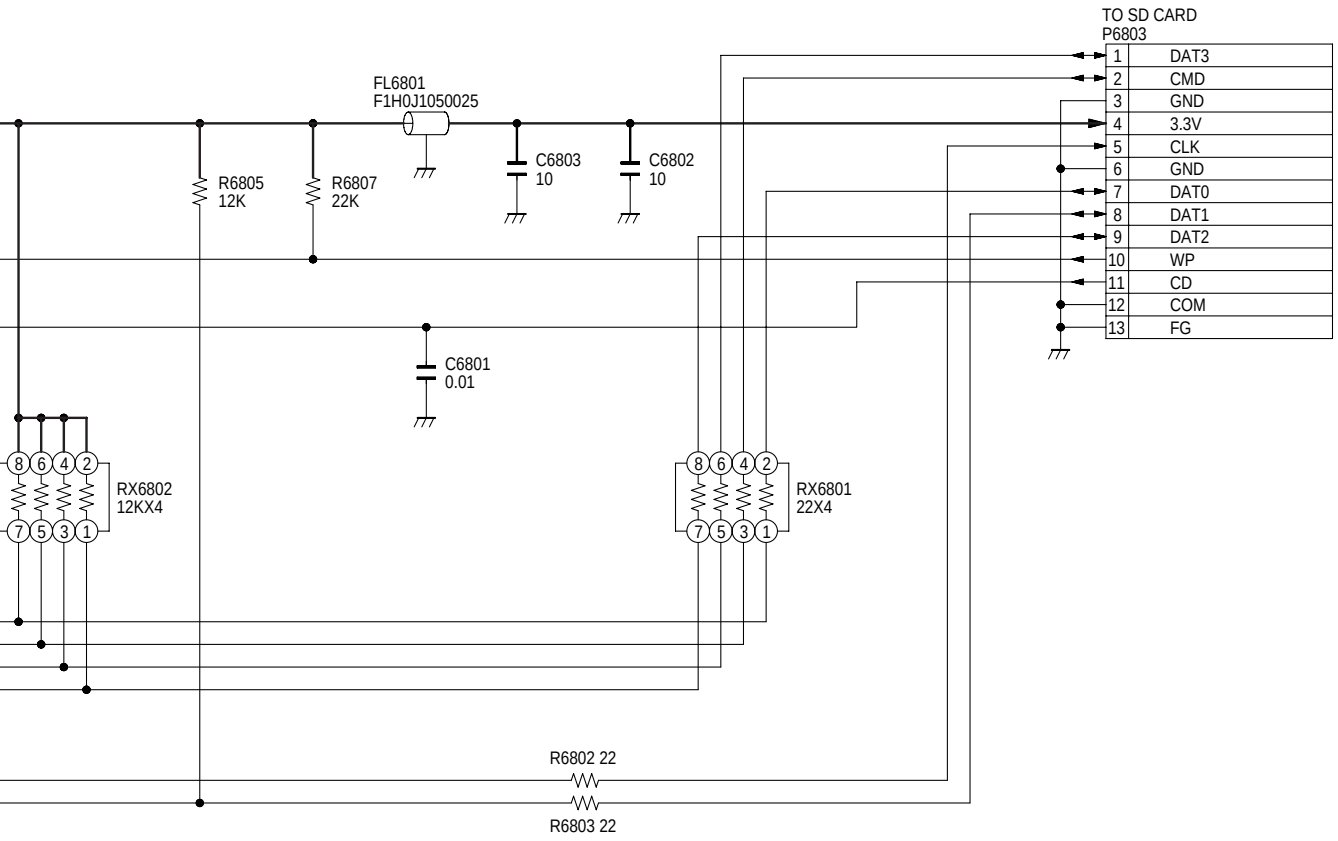
NOTE:
DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM
FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH50EB/EG/EP,EH52EG
Nicam Decoder
Schematic Diagram

5 | 6 | 7 | 8

18.8. SD Card Schematic Diagram



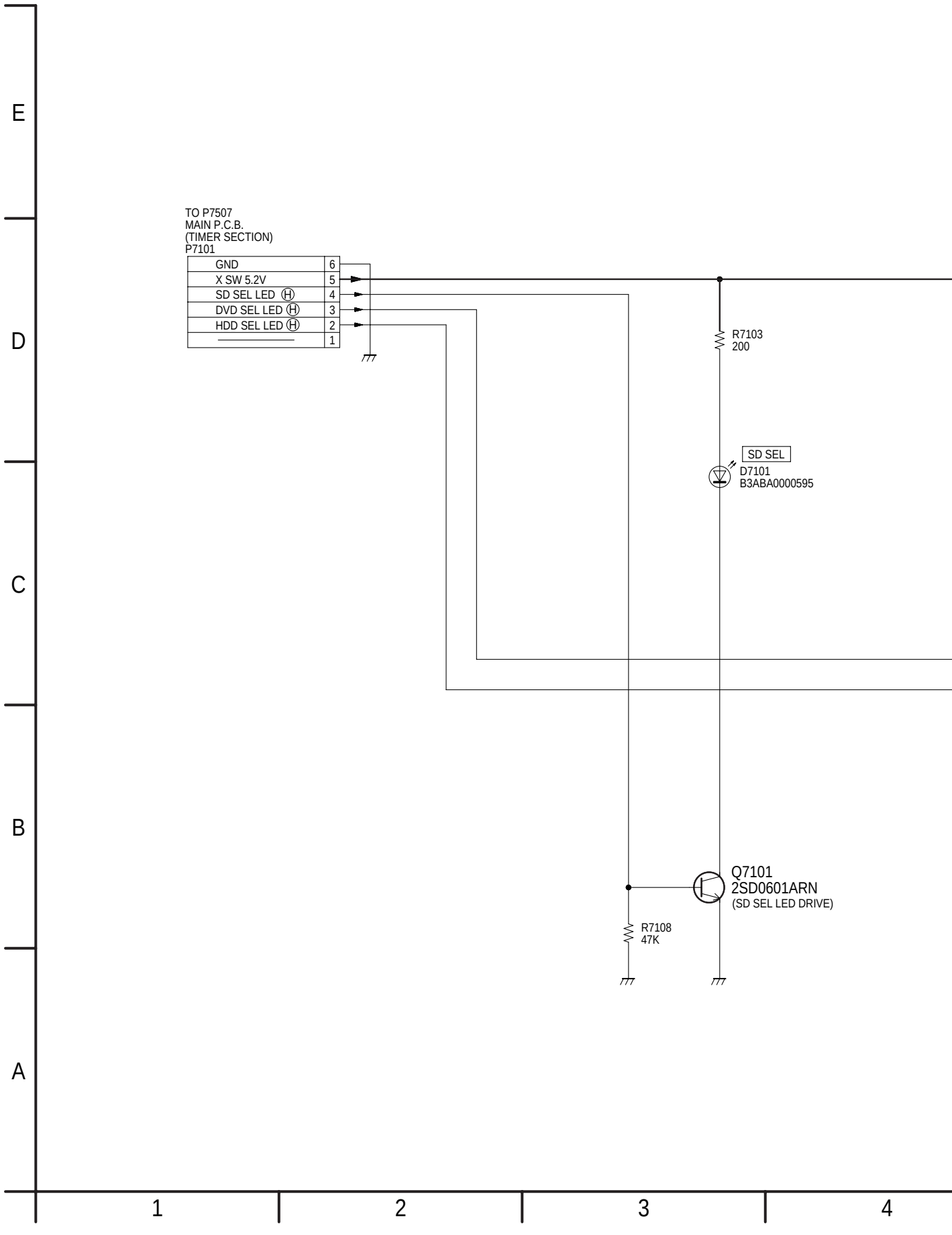


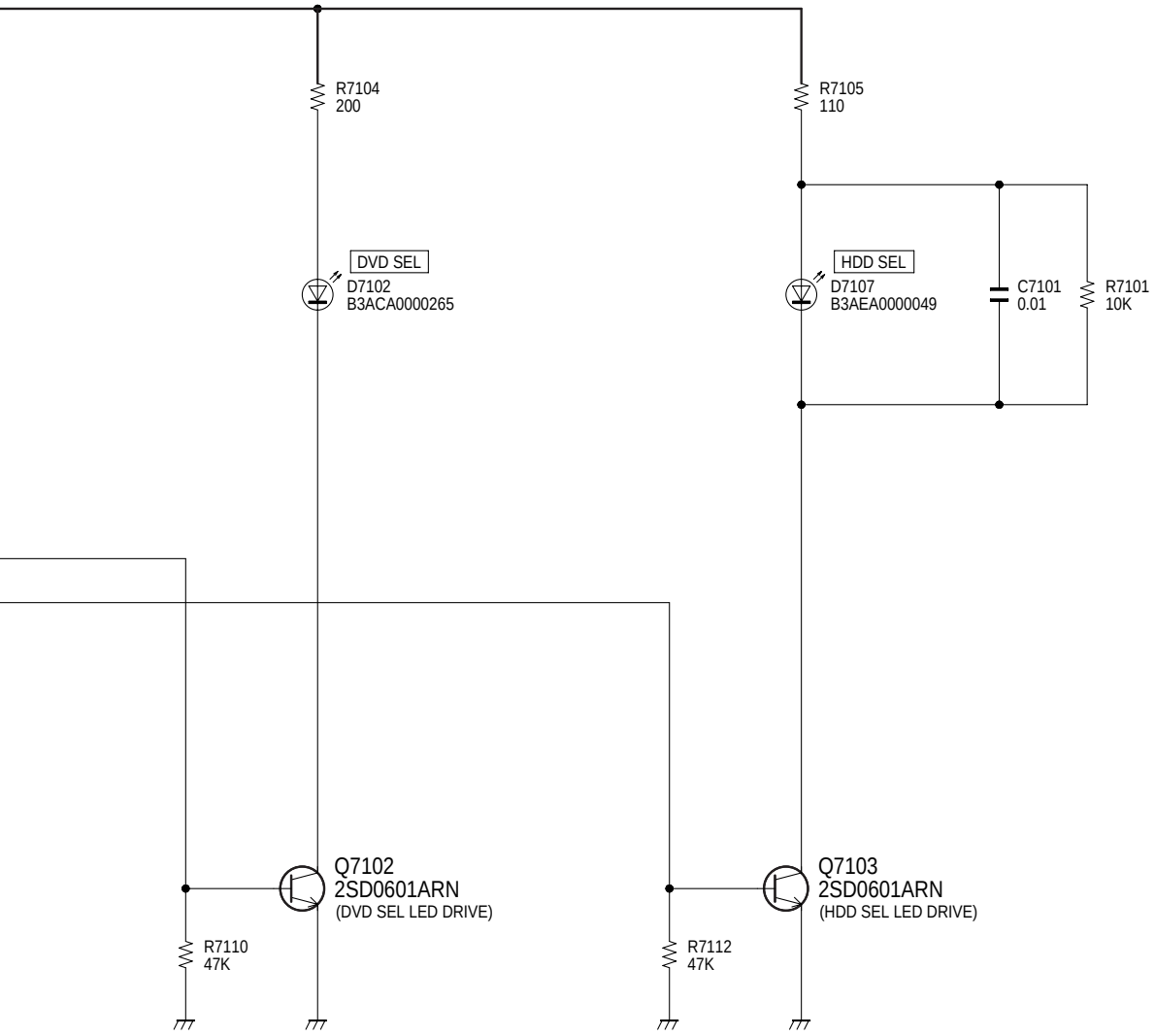
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH50EB/EG/EP,EH52EG
SD Card Schematic Diagram

4 | 5 | 6 | 7

18.9. LED Schematic Diagram





NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

DMR-EH50EB/EG/EP,EH52EG
LED Schematic Diagram

4 | 5 | 6 | 7

Ref No.	Q7101				Q7102				Q7103											
MODE	E	C	B		E	C	B		E	C	B									
REC	0	3.7	0		0	0.1	0.7		0	5.2	0									
PLAY	0	3.7	0		0	0.1	0.7		0	5.2	0									
STOP	0	3.7	0		0	0.1	0.7		0	5.2	0									

Ref No.	IC1501									IC1502										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
REC	5.0	0	0	3.4	4.9	0	0	5.7		3.3	0	0	2.0	4.9	0	0	3.6			
PLAY	5.0	0	0	3.4	4.9	0	0	5.7		3.3	0	0	2.0	4.9	0	0	3.6			
STOP	5.0	0	0	3.4	4.9	0	0	5.7		3.3	0	0	2.0	4.9	0	0	3.7			
Ref No.	IC1504						IC1505													
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8						
REC	3.6	3.2	3.3	2.6	0		3.3	0	0	1.9	4.1	0	4.6	3.6						
PLAY	3.6	3.2	3.3	2.6	0		3.3	0	0	1.9	4.1	0	4.6	3.6						
STOP	3.7	3.2	3.3	2.6	0		3.3	0	0	2.0	4.1	4.0	4.6	3.6						
Ref No.	IC1510						IC1511													
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8						
REC	5.6	4.9	5.0	0	0		5.2	0	0	3.6	5.7	0	0	5.7						
PLAY	5.6	4.9	5.0	0	0		5.2	0	0	3.6	5.7	0	0	5.7						
STOP	5.6	4.9	5.0	0	0		5.2	0	0	3.6	5.7	0	0	5.7						
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	2.0	2.5	1.6	0	1.6	5.0	1.6	5.0	0.4	0.3	1.6	0.4	0	1.7	1.7	1.6	0.4	0	1.7	1.7
PLAY	2.0	2.5	1.6	0	1.6	5.0	1.6	5.0	0.4	0.3	1.6	0.4	0	1.7	1.7	1.6	0.4	0	1.7	1.7
STOP	2.0	2.5	1.6	0	1.6	5.0	1.6	5.0	0.4	1.6	1.6	0.4	0	1.7	1.7	1.6	0.4	0	1.7	1.7
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	1.7	1.7	1.7	5.0	1.4	0.1	1.4	0	2.1	1.6	0	1.6	0	0	0.3	1.6	0	1.6	5.0
PLAY	0	1.7	1.7	1.7	5.0	1.4	0.1	1.4	0	2.1	1.6	0	1.6	0	0	0.3	1.6	0	1.6	5.0
STOP	0	1.7	1.6	1.7	5.0	1.4	0.2	1.4	0	2.1	1.6	0	1.6	0	2.1	0.3	1.6	0	1.6	5.0
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	1.6	5.1	2.0	0	2.0	11.6	1.6	2.0	4.5	4.4	4.4	4.0	4.5	4.5	4.5	4.5	9.1	4.4	4.4	4.5
PLAY	1.6	5.1	2.0	0	2.0	11.6	1.6	2.0	4.5	4.4	4.4	4.0	4.5	4.5	4.5	4.5	9.1	4.4	4.4	4.5
STOP	1.6	5.1	2.0	0	2.0	11.6	1.6	2.0	4.5	4.5	4.0	4.5	4.5	4.4	3.8	3.9	9.1	4.0	4.3	3.7
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	4.5	4.5	4.5	4.5	9.0	0	0.9	0.9	1.4	1.4	4.5	4.5	4.5	4.5	0	4.5	9.5	4.5	4.5	0
PLAY	4.5	4.5	4.5	4.5	9.0	0	0.9	0.9	1.4	1.4	4.5	4.5	4.5	4.5	0	4.5	9.5	4.5	4.5	0
STOP	3.7	3.7	3.7	3.8	9.0	0	1.2	0.4	0.4	0.4	4.5	4.5	4.5	4.5	0.4	0.4	0.3	4.5	4.5	0

Ref No.	IC3001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	2.1	5.0	1.5	5.1	2.1	4.5	3.6	4.8	4.6	5.0	2.0	2.8	2.1	5.1	2.0	0	2.1	0	2.0	2.5
PLAY	2.1	5.0	1.5	5.1	2.1	4.5	3.6	4.8	4.6	5.0	2.0	2.8	2.1	5.1	2.0	0	2.1	0	2.0	2.5
STOP	4.7	5.0	1.5	5.1	2.1	4.5	3.6	4.8	4.6	5.1	5.0	2.8	2.1	5.1	2.0	0	2.1	0	2.0	2.5

Ref No.	IC4009								IC4011											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5						
REC	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		1.3	0	4.9	5.7	5.0						
PLAY	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		1.3	0	4.9	5.7	5.0						
STOP	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		1.3	0	4.9	5.7	5.0						

Ref No.	IC4012								IC7401											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5						
REC	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		12.3	4.2	11.6	2.6	0						
PLAY	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		12.3	4.2	11.6	2.6	0						
STOP	5.8	5.8	5.8	0	5.8	5.8	5.8	11.6		12.3	4.2	11.6	2.6	0						

Ref No.	IC7402							IC7403												
MODE	1	2	3	4	5	6		1	2	3	4	5	6	7	8					
REC	5.6	0	5.6	1.3	0	5.1		5.0	0	0	2.7	4.1	0.3	0.4	5.6					
PLAY	5.6	0	5.6	1.3	0	5.1		5.0	0	0	2.7	4.1	0.3	0.4	5.6					
STOP	5.6	0	5.6	1.3	0	5.1		5.0	0	0	3.4	4.2	3.8	0	5.6					

Ref No.	IC7501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0.3	4.9	3.8	0.8	0.8	4.4	0	0	0.7	1.2	5.0	1.4	0	2.1	3.3	4.9	3.3	3.2	3.2	3.1
PLAY	0.3	4.9	3.8	0.8	0.8	4.4	0	0	0.7	1.2	5.0	1.4	0	2.1	3.3	4.9	3.3	3.2	3.2	3.1
STOP	0.6	4.9	4.5	0.9	0.9	4.4	0	0	0.7	1.2	5.0	1.4	0	2.1	3.3	4.9	3.3	3.2	3.2	3.1

Ref No.	IC7501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	0	0	0	3.3	0	0	0	0	4.6	0	0.9	1.6	1.2	5.0	2.6	0	0	0.1	3.3	3.3
PLAY	0	0	0	3.3	0	0	0	0	4.6	0	0.9	1.6	1.2	5.0	2.6	0	0	0.1	3.3	3.3
STOP	0	0	0	3.3	0	0	0	4.8	4.6	0	0.9	1.6	1.2	5.0	2.6	0	0	0.1	3.3	3.3

Ref No.	IC7501																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	0	3.3	3.2	3.3	0	0	5.0	0	4.9	4.9	4.9	0	4.9	5.1	5.0	0	0	0	0	4.9
PLAY	0	3.3	3.2	3.3	0	0	5.0	0	4.9	4.9	4.9	0	4.9	5.1	5.0	0	0	0	0	4.9
STOP	0	3.3	3.2	3.3	0	0	5.0	4.9	4.9	4.9	4.9	0	4.9	5.1	5.0	0	0	0	0	4.9

Ref No.	IC7501																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	4.9	4.9	0	0	0	0	0	5.0	0	0	0	0	0	0	0	4.9	0	0	4.1
PLAY	0	4.9	4.9	0	0	0	0	0	5.0	0	0	0	0	0	0	0	4.9	0	0	4.1
STOP	0	4.9	4.9	0	0	0	0	0	5.0	0	0	0	0	0	0	0	4.9	0	0	4.1

Ref No.	IC7501																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
REC	0	5.0	0	0	0	0	4.9	0	0	0	0	0	4.9	0	5.0	4.9	0.6	2.3	4.7	3.2
PLAY	0	5.0	0	0	0	0	4.9	0	0	0	0	0	4.9	0	5.0	4.9	0.6	2.3	4.7	3.2
STOP	0	5.0	0	0	0	0	4.9	0	0	0	0	0	4.9	0	4.9	2.5	2.1	0.3	4.7	0

Ref No.	IC7501																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116				
REC	4.9	5.0	0	5.0	5.0	5.0	5.0	5.0	5.0	1.3	0	5.0	2.0	0	0	0.5				
PLAY	4.9	5.0	0	5.0	5.0	5.0	5.0	5.0	5.0	1.3	0	5.0	2.0	0	0	0.5				
STOP	5.0	5.0	0	5.0	5.0	5.0	5.0	5.0	5.0	1.3	0	5.0	2.0	0	0	1.0				

Ref No.	IC7502						IC7503													
MODE	1	2	3	4	5		1	2	3	4	5	6	7	8						
REC	0	0	0	5.0	5.0		0	0	0	0	4.6	4.8	4.9	5.0						
PLAY	0	0	0	5.0	5.0		0	0	0	0	4.6	4.8	4.9	5.0						
STOP	0	0	0	5.0	5.0		0	0	0	0	4.6	4.7	4.9	5.0						

Ref No.	IC7504																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	4.9	0	4.4	2.5	0	2.2	2.2	5.0	-27.8	-25.8	-25.7	-26.5	-25.6	-25.1	-24.7	-27.8	-24.7	5.0	-24.7	-21.6
PLAY	4.9	0	4.4	2.5	0	2.2	2.2	5.0	-27.8	-25.8	-25.7	-26.5	-25.6	-25.1	-24.7	-27.8	-24.7	5.0	-24.7	-21.6
STOP	4.9	0	4.4	0.8	0	2.2	2.2	5.0	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-18.0	5.0	-15.5	-18.0

Ref No.	IC7504																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-18.5	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-21.5	-21.5	-18.4	-21.6	-21.6	-13.3	-15.6	-9.8	-18.5	-21.6	-18.5	-11.7	-21.3
PLAY	-18.5	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-21.5	-21.5	-18.4	-21.6	-21.6	-13.3	-15.6	-9.8	-18.5	-21.6	-18.5	-11.7	-21.3
STOP	-13.0	-18.0	-15.5	-18.2	-18.4	-18.0	-18.1	-18.1	-10.5	-13.4	-18.5	-16.5	-15.1	-16.0	-3.9	-17.8	-10.1	-12.2	-12.2	-14.2

Ref No.	IC7504																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	-21.6	-21.7	-21.9	-22.4	-19.3	-13.6	-16.2	-21.9	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-24.7	-24.7	-24.7	-24.7	-24.7
PLAY	-21.6	-21.7	-21.9	-22.4	-19.3	-13.6	-16.2	-21.9	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-27.8	-24.7	-24.7	-24.7	-24.7	-24.7
STOP	-16.5	-17.2	-17.2	-16.6	-14.2	-14.3	-14.7	-27.8	-27.8	-27.3	-27.8	-27.0	-26.5	-26.5	-26.5	-25.0	-23.6	-24.5	-23.6	-23.0

Ref No.	IC7504																			
MODE	61	62	63	64																
REC	-24.7	-24.7	-24.7	-28.0																
PLAY	-24.7	-24.7	-24.7	-28.0																
STOP	-22.5	-22.5	-22.4	-28.0																

Ref No.	IC7505						IC7506						IC7507							
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
REC	4.1	5.2	0	0	0		2.2	3.3	0	0	0		5.7	1.3	1.3	0	0.2	0.3	11.2	12.3
PLAY	4.1	5.2	0	0	0		2.2	3.3	0	0	0		5.7	1.3	1.3	0	0.2	0.3	11.2	12.3
STOP	4.1	5.2	0	0	0		2.2	3.3	0	0	0		5.7	1.3	1.3	0	0.3	0.2	11.2	12.3

Ref No.	Q3907				Q3908			Q3909				Q3910								
MODE	E	C	B		E	C	B	E	C	B		E	C	B						
REC	4.6	4.6	5.0		4.6	4.6	5.0	4.6	0.3	0		0.3	4.3	0.1						
PLAY	4.6	4.6	5.0		4.6	4.6	5.0	4.6	0.3	0		0.3	4.3	0.1						
STOP	4.4	4.4	4.7		4.6	4.6	5.0	4.6	0.3	0		0.1	4.6	0.1						

Ref No.	Q4004			Q4006			Q4007			Q4008			Q4009		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	5.2	-0.9	5.2	0	0	-0.1	0	0	-0.1	0	0	-0.2	0	0	-0.2
PLAY	5.2	-0.9	5.2	0	0	-0.1	0	0	-0.1	0	0	-0.2	0	0	-0.2
STOP	5.2	-0.4	5.2	0	0	-0.1	0	0	-0.1	0	0	0.4	0	0	0
Ref No.	Q7401			Q7501			Q7502			Q7503			Q7504		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	11.6	0	2.7	0	2.1	2.0	5.0	1.6	2.7	0	2.1	2.0	5.0	1.6
PLAY	0	11.6	0	2.7	0	2.1	2.0	5.0	1.6	2.7	0	2.1	2.0	5.0	1.6
STOP	0.1	11.6	0	2.7	0	2.1	2.0	5.0	1.6	2.7	0	2.1	2.0	5.0	1.6
Ref No.	Q7506			Q7507			Q7508			Q7510			Q7511		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	5.0	0	0	4.6	0	0	4.6	0	0	29.3	0	5.1	12.3	5.5
PLAY	0	5.0	0	0	4.6	0	0	4.6	0	0	29.3	0	5.1	12.3	5.5
STOP	0	5.0	0	0	5.1	0.1	0	5.1	0.1	0	29.1	0	5.1	12.3	5.6
Ref No.	QR3914			QR4002			QR4003			QR4004			QR4005		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	5.0	0	0	0	4.9	0	0	2.4	0	5.2	0	0	5.2	0
PLAY	0	5.0	0	0	0	4.9	0	0	2.4	0	5.2	0	0	5.2	0
STOP	0	5.0	0	0	0	4.9	0	0	2.4	0	5.2	0	0	5.2	0
Ref No.	QR7401			QR7403			QR7404			QR7501			QR7503		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	4.2	0	0	0	4.9	0	0	0	0	4.5	0.3	0	3.3	0
PLAY	0	4.2	0	0	0	4.9	0	0	0	0	4.5	0.3	0	3.3	0
STOP	0	4.2	0	0	0	4.9	0	0	0	0	4.4	0.3	0	3.3	0
Ref No.	QR7506			QR7507			QR7508								
MODE	E	C	B	E	C	B	E	C	B						
REC	0	0	2.2	0	0	4.1	0	0.1	0						
PLAY	0	0	2.2	0	0	4.1	0	0.1	0						
STOP	0	0	2.2	0	0	4.1	0	0.1	0						

Ref No.	P9001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	5.1	5.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.1	3.3	2.3	-	5.1	-	-	-
PLAY	5.1	5.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.1	3.3	2.3	-	5.1	-	-	-
STOP	5.1	5.1	3.3	3.3	3.3	3.3	3.3	3.2	3.3	0.2	3.3	3.2	3.2	3.3	2.3	-	5.1	-	-	-
Ref No.	P9001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	-	-	-	-	0	-	0	3.3	2.5	4.8	2.5	-	0	0	0	1.7	0	3.3	2.5	-
PLAY	-	-	-	-	0	-	0	3.3	2.5	4.8	2.5	-	0	0	0	1.7	0	3.3	2.5	-
STOP	-	-	-	-	0	-	0	3.3	2.5	4.8	2.5	-	0	0	0	1.7	0	3.3	2.5	-
Ref No.	P9001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
REC	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	3.3	1.0	3.7	0	3.7	1.1	6.2
PLAY	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	3.3	1.0	3.7	0	3.7	1.1	6.2
STOP	2.5	3.3	0	0	0	0	1.1	5.0	0	-	1.5	5.0	0	3.3	1.0	3.7	0	3.7	1.1	6.2
Ref No.	P9001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
REC	0	6.2	1.0	6.2	0	3.3	0	3.3	0	3.3	0	3.3	0	3.3	0	-	0	-	0	-
PLAY	0	6.2	1.0	6.2	0	3.3	0	3.3	0	3.3	0	3.3	0	3.3	0	-	0	-	0	-
STOP	0	6.2	1.0	6.2	0	3.3	0	3.3	0	3.3	0	3.3	0	3.3	0	-	0	-	0	-
Ref No.	P9001																			
MODE	81	82	83	84	85	86	87	88												
REC	0	1.5	1.3	1.5	0	1.5	2.1	1.5												
PLAY	0	1.5	1.3	1.5	0	1.5	2.1	1.5												
STOP	0	1.5	1.3	1.5	0	1.5	2.1	1.5												

Ref No.	IC1150										IC1200									
MODE	1	2	3	4	5	6	7	8	9		1	2	3							
REC	3.0	1.5	0	11.6	0	-	310	-	-1523		8.3	2.5	0							
PLAY	3.0	1.5	0	11.6	0	-	310	-	-1523		8.3	2.5	0							
STOP	3.0	1.5	0	11.6	0	-	310	-	-1538		8.3	2.5	0							

Ref No.	IC1400									IC1401						IC1501				
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5		1	2	3	4	5
REC	12.4	0	1.4	4.3	0	0.9	0.8	1.1		5.6	4.9	5.2	2.7	0		0	0	0	5.1	5.1
PLAY	12.4	0	1.4	4.3	0	0.9	0.8	1.1		5.6	4.9	5.2	2.7	0		0	0	0	5.1	5.1
STOP	12.4	0	1.4	4.3	0	0.9	0.8	1.1		5.6	4.9	5.2	2.7	0		0	0	0	5.1	5.1

Ref No.	IC1601									IC1701										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
REC	12.3	4.5	1.2	1.3	0.8	0	7.6	12.3		12.4	4.5	1.2	1.3	0	0	8.5	12.4			
PLAY	12.3	4.5	1.2	1.3	0.8	0	7.6	12.3		12.4	4.5	1.2	1.3	0	0	8.5	12.4			
STOP	12.3	4.5	1.2	1.3	0.8	0	7.6	12.3		12.4	4.5	1.2	1.3	1.2	0	8.5	12.4			

Ref No.	Q1200					Q1270									Q1400					
MODE	1	2	3	4		1	2	3	4	5	6	7	8		1	2	3	4	5	6
REC	9.3	8.3	0	1.5		12.4	12.4	12.4	6.2	12.4	12.4	12.4	12.4		6.1	6.1	7.6	12.3	6.2	6.2
PLAY	9.3	8.3	0	1.5		12.4	12.4	12.4	6.2	12.4	12.4	12.4	12.4		6.1	6.1	7.6	12.3	6.2	6.2
STOP	9.3	8.3	0	1.5		12.4	12.4	12.3	6.2	12.4	12.4	12.4	12.4		5.9	6.2	7.6	12.3	6.3	6.2

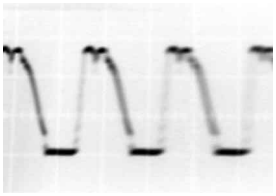
Ref No.	Q1600									Q1700										
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6					
REC	12.3	12.3	12.3	7.6	5.5	5.4	5.5	5.6		3.0	3.0	8.5	12.4	2.9	3.0					
PLAY	12.3	12.3	12.3	7.6	5.5	5.4	5.5	5.6		3.0	3.0	8.5	12.4	2.9	3.0					
STOP	12.3	12.3	12.3	7.6	5.6	5.6	5.6	5.6		3.0	3.1	8.5	12.4	3.0	3.0					

Ref No.	QR1301				QR1302				QR1303				QR1304				QR1800			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
REC	0	0	3.3		0	0.1	5.0		0	4.9	0.1		0	0	5.0		11.9	0	12.3	
PLAY	0	0	3.3		0	0.1	5.0		0	4.9	0.1		0	0	5.0		11.9	0	12.3	
STOP	0	0	3.3		0	0.1	5.0		0	4.9	0.1		0	0	5.0		11.9	0	12.3	

Ref No.	QR1801		
MODE	E	C	B
REC	0	4.5	0
PLAY	0	4.5	0
STOP	0	4.5	0

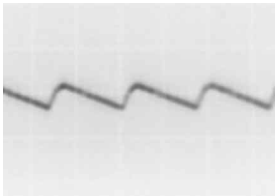
Ref No.	Q7802		
MODE	E	C	B
REC	3.8	1.2	3.1
PLAY	3.8	1.2	3.1
STOP	3.8	1.2	3.1

Ref No.	QR7806			QR7807		
MODE	E	C	B	E	C	B
REC	0	-0.6	0	0	0	-0.6
PLAY	0	-0.6	0	0	0	-0.6
STOP	0	-0.5	0	0	0	-0.4

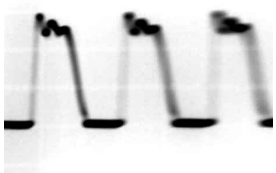


T1150-3 STOP
30Vp-p (5 μ sec.div)

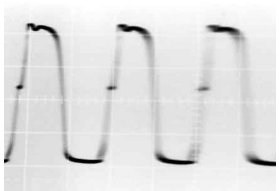
T1150-5 STOP
560Vp-p (5 μ sec.div)



T1150-7 STOP
8Vp-p (5m sec.div)

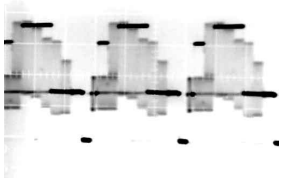


T1150-15,18 STOP
30Vp-p (5 μ sec.div)

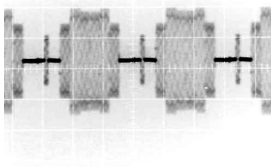


IC1150-1 STOP
8.0Vp-p (5 μ sec.div)

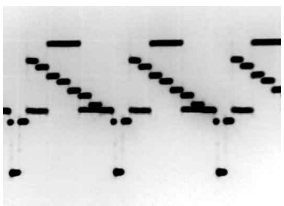
IC1150-2 STOP
0.5Vp-p (5 μ sec.div)



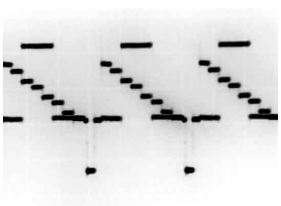
P7402-83 REC/PLAY
1.0Vp-p (20 μ sec.div)



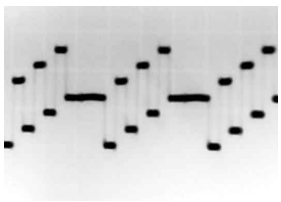
P7402-51 REC/PLAY
0.7Vp-p (20 μ sec.div)



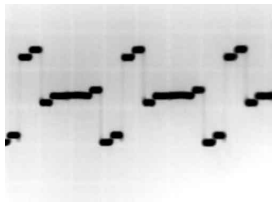
P7402-47 REC/PLAY
1.0Vp-p (20 μ sec.div)



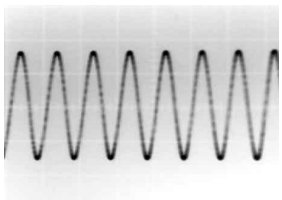
P7402-59 REC/PLAY
1.0Vp-p (20 μ sec.div)



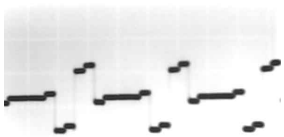
P7402-63 REC/PLAY
0.6Vp-p (20 μ sec.div)



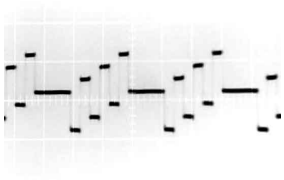
P7402-55 REC/PLAY
0.6Vp-p (20 μ sec.div)



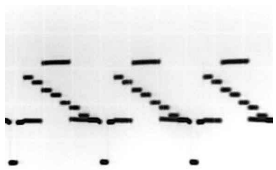
P7402-29,31 REC/PLAY
0.8Vp-p (1m sec.div)



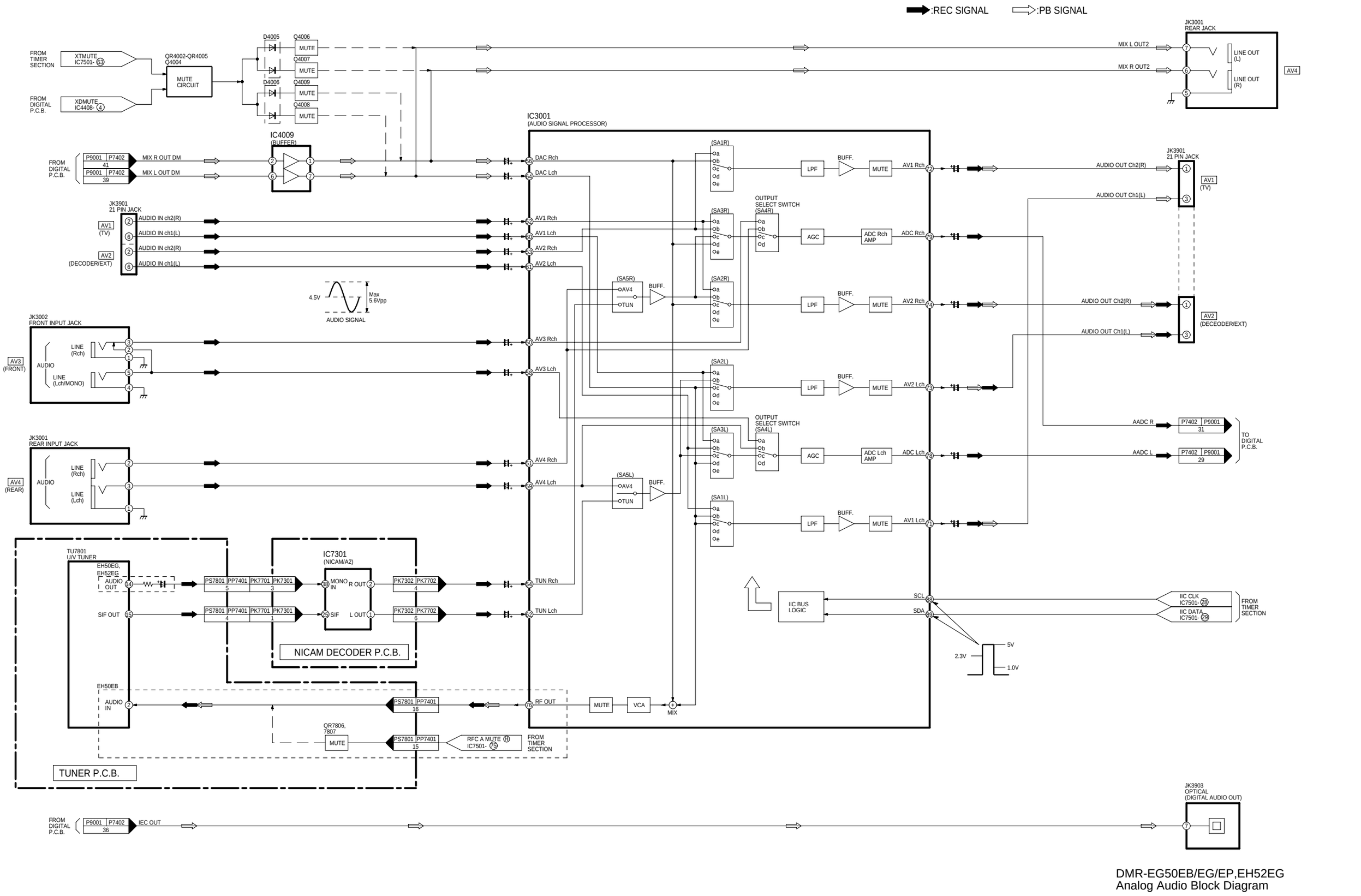
JK3903-2 REC/PLAY
1.1Vp-p (20 μ sec.div)



JK3903-3 REC/PLAY
1.1Vp-p (20 μ sec.div)



JK3903-4 REC/PLAY
2.0Vp-p (20 μ sec.div)



DMR-EG50EB/EG/EP,EH52EG
Analog Audio Block Diagram

:REC SIGNAL :PB SIGNAL

MAIN P.C.B.

IC3001
(VIDEO PROCESSOR)

FROM DIGITAL P.C.B.

P9001 P7402 51 C OUT DM → 61 BIAS 6MHz BPF
P9001 P7402 47 Y OUT DM → 63 CLAMP 6MHz LPF
P9001 P7402 55 RPROUT DM → 55 CLAMP/BIAS
P9001 P7402 59 GPYOUT DM → 57 CLAMP
P9001 P7402 63 BPBOUT DM → 59 CLAMP/BIAS

AV1 (TV) JK3901 21 PIN JACK 20 AV1 VIDEO → 33 AV1 V CLAMP

AV3 JK3002 FRONT JACK
S-VIDEO IN 11 AV3 Y → 41 AV3 Y CLAMP
12 AV3 C → 45 AV3 C BIAS
VIDEO IN 7 AV3 V → 37 AV3 V CLAMP

AV4 JK3001 REAR JACK
VIDEO IN 4 AV4 V → 35 AV4 V CLAMP

AV4 JK3003 S-VIDEO
S-VIDEO IN 3 AV4 Y → 39 AV4 Y CLAMP
4 AV4 C → 43 AV4 C BIAS

AV2 (DECODER/EXT) JK3901 21 PIN JACK
15 RED/C → 1 AV2 R/C BIAS CLAMP (SW10) b a
11 GREEN → 3 AV2 G CLAMP
7 BLUE → 5 AV2 B CLAMP
20 VIDEO/Y → 31 AV2 V/Y CLAMP

RGB CPS V, B, G, R

6MHz 12MHz (SW1) a b c → (SW2) a b c → COMP R-Y OUT 7
(SW3) a b c d → AV1 R-C OUT 9
6MHz 12MHz (SW4) a b c → COMP B-Y OUT 11
AV1 B OUT 12
6MHz 12MHz (SW5) a b c → (SW6) a b c d → COMP Y OUT 14, 15
AV1 G OUT 17
(SW7) a b → AV4 Y OUT 20, 19
(SW8) a b → AV4 C OUT 22
(SW9) a b → AV4 V OUT 23, 24
SV1 a b c d e → AV1 V/Y/C OUT 26
SV2 a b c d e → AV2 V OUT 28

AV1 V, AV3 Y, AV3 C, AV3 V, AV4 V, AV4 Y, AV4 C, AV2 R/C, AV2 V/Y, TUNER V → ADC OUTPUT SELECT SWITCH CIRCUIT
C-ADC OUT 31
V/Y ADC OUT 33
SLICER 35 → SLICER Q7501,Q7503- (B)
IIC BUS LOGIC
SCL 38 → IIC CLK IC7501- 28
SDA 39 → IIC DATA IC7501- 29
FROM/TO TIMER SECTION
TUNER V 30 ← CLAMP
2.3V, 5V, 1.0V

JK3903
2 PR, 3 PB, 4 Y, 1
COMPONENT VIDEO OUT (PROGRESSIVE/INTERLACE)

JK3801 21PIN JACK
15 RED/C, 7 BLUE, 11 GREEN, 19 VIDEO/Y
AV1 (TV)

JK3003 S-VIDEO
6 Y, 10 C
AV4

JK3001 VIDEO OUT
8, 5
AV4

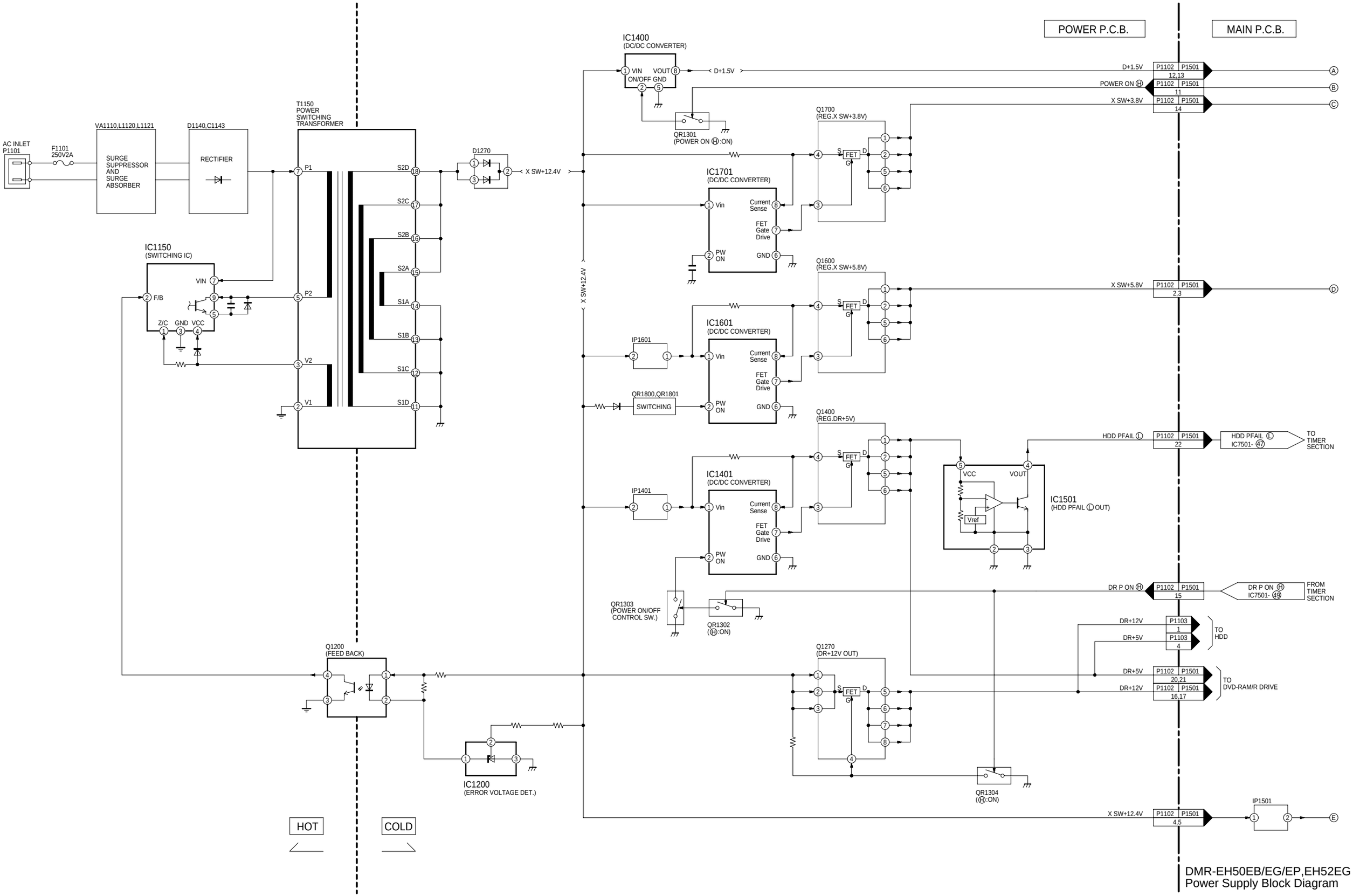
JK3901 21PIN JACK
19 VIDEO
AV2 (DECODER/EXT)

CPN CIN DM, V/Y IN DM, R, G, B, RGB CPS V → P7402 P9001 87, 83, 67, 71, 75, 79 → TO DIGITAL P.C.B.

TU7801 U/V TUNER
PP7401 PS7801 2 → EH50EP Q7802 BUFFER → VIDEO OUT 18
EH50EB/EG,EH52EG K7809
PP7401 PS7801 12 → VIDEO IN 6
EH50EB
TUNER P.C.B.

AV2 R/G/B

DMR-EH50EB/EG/EP,EH52EG
Analog Video Block Diagram



DMR-EH50EB/EG/EP,EH52EG
Power Supply Block Diagram

MAIN P.C.B.

DIGITAL P.C.B.

Ⓐ D+1.5V

Ⓑ POWER ON Ⓗ

Ⓒ X SW+3.8V

IC1501
(REG.ANA+5V)
8 VIN VOUT 1
GND CONT
3 5
ANA+5V

IC4011
(REG.AU+5V)
4 VIN VOUT 5
GND Ⓗ:ON
2 3
AU+5V

Ⓓ

X SW+5.8V

IC1511
(REG.X SW+5.2V)
5 CONT
VOUT 1
8 VIN GND 3
X SW+5.2V

IC7505
(RESET)
2 VDD OUT 1
P FAIL Ⓛ
IC7501- 80

D7509
2 1
3 4
IC7501- 34 / 69 / 106 / 108 / 112
IC7503- 8 ,IC7504- 8 / 18

IC7502
(RESET)
5 VDD OUT 4
RESET Ⓛ
IC7501- 11

IC7402
(REG.BOOSTER+5V)
1 VIN
VOUT 6
3 Ⓗ:ON
GND GND
2 5
BOOSTER+5V
IC3001- 42 / 84 / 94

IC7403
(REG.PS+5V)
8 VIN VOUT 1
GND CONT
3 5
PS+5V
IC3001- 6 / 8 / 25 / 40

X SW+12.4V
IP7501
1 2
T7501
DISPLAY HEATER
POWER SWITCHING
TRANSFORMER
1 7
D7506
UNREG +38V

IC7507- 8

IC7401
(REG.PS+11.6V)
1 VIN VOUT 3
Ⓗ:ON GND
2 5
PS+11.6V
IC3001- 46 ,IC4009- 8 ,IC4012- 8

PWR SAVE :ON Ⓗ
IC7501- 78
FROM TIMER SECTION

QR7401
(Ⓗ:ON)

Ⓔ

IC1510
(REG.+5V)
1 VIN VOUT 3
GND Ⓗ:ON
5 2
JC REG.+5V

JC P ON Ⓗ
IC7501- 50
FROM TIMER SECTION

IC1504
(REG.D+3.3V)
2 VCONT
VOUT 3
1 VIN GND 5

IC7506
(RESET)
2 VDD OUT 1
Ⓗ:ON
QR7506
(INV.SW.)
SYS PFAIL Ⓗ
IC7501- 81

D+3.3V
RESET +5.2V
IC7505- 1

IC1505
(REG.X SW+3.3V)
5 CONT
VOUT 1
8 VIN GND 3
X SW+3.3V
IC7501- 15

IC1502
(REG.ANA+3.3V)
8 VIN VOUT 1
GND CONT
3 5
ANA+3.3V

DI P ON Ⓗ
IC7501- 51
FROM TIMER SECTION

P7402 P9001
82,84,86,88

IC9001
(REG.D+1.2V)
8 VIN
VOUT 1
5 CONT
GND 3
D+1.2V
IC3201- 208 ~ 234

P7402 P9001
48,52
ANA+5V
IC3206- 6 / 18 / 26

P7402 P9001
17

IC4409
(REG.DAC+3.3V)
1 VIN
VOUT 6
3 Ⓗ:ON
GND GND
2 5
DAC+3.3V
IC4406- 7 (VDD)
AU+5V
IC4404- 11 ,IC4405- 8 ,IC4406- 6

P7402 P9001
68,70,72,74
D+3.3V
IC4408,IC3201,IC3206,IC3207
IC3208,IC6001,IC6004,P3201- 2
(D+3.3V)

IC6008
(REG.D+2.5V)
1 VIN VOUT 3
2 VB GND 5
D+2.5V
IC3201,IC6006,IC6007

IC6005
(RESET)
5 VDD VOUT 4
X RESET OUT

P7402 P9001
42
ANA+3.3V
IC3201,IC3202,IC3206
(ANA+3.3V)

TUNER P.C.B.

TU7801
U/V TUNER

PP7401 PS7801
17
1 BOOSTER+B

PP7401 PS7801
13
EH50EB
4 5V(RFC)

EH50EG/EP,
EH52EG
K7810
EH50EB

PP7401 PS7801
10
7 5V(TUNER)

PP7401 PS7801
3
16 BTL+30V

17 5V(VIF)

NICAM DECODER P.C.B.

IC7301- 28
IC7301- 3 / 6 / 35

IC7302
(RESET)
1 VDD OUT 3
IC7301- 26

PK7701 PK7301
7

DMR-EH50EB/EG/EP,EH52EG
Power Supply Block Diagram

DMR-EH50EB/EG/EP,EH52EG
Power Supply Block Diagram